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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

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SPECIAL NOTICE!

42nd Annual Meeting of the State Society.

Del Monte is the place. April 16th, 17th and 18th—the time. Do not forget.

The usual railroad rates of one and one-third fare for the round trip will be in force.

Scientific Program. Those desiring to present papers should write to Dr. Wm. Ophuls, Lane Hospital, Clay and Webster streets, San Francisco, Calif.

The By-Laws were amended last year and the length of papers is now limited to 15 minutes; discussions are limited to 3 minutes, except the opening and closing discussions, which are allowed 5 minutes.

Reservations. Write to the Hotel Del Monte early, making your reservation for room and get a rate therefor.

April 16th, 17th and 18th, 1912.

Hotel Del Monte.

EDITORIAL NOTES.

DIORADIN ONCE MORE.

The way in which a manufacturer who is industriously striving to promote a useless remedy is abused, now-a-days, by some journals, is enough to bring tears to the eyes of any self-respecting crocodile! Were we but crocodiles we would weep most copious (with apologies to Chimmie Fadden). All of which is but a painful part of the turgid feelings aroused by reading a circular from the "Dioradin Company," addressed "To the Physicians of California" and sub-headed "Dr. Max Rothschild's Disgraceful Editorial." According to the (of course) wonderfully glowing and encouraging "literature" of the manufacturer of this "radio-active (?) metholated iodine" (trade name, Dioradin—thus getting in the hypnotic suggestion of "radio-active"!) it is the greatest thing the world has ever seen, for the treatment of tuberculosis; and it costs *only* $25.20 for a course of treatment! In the November issue of the JOURNAL, Dr. Rothschild contributed a signed editorial embodying his experience with this wonderful (?) "radio-active" (?) remedy, which editorial he very temperately and with proper moderation concluded as follows: "It is evidently one of the many new drugs which are put on the market in clever fashion, and which are advertised in a most convincing manner, but which are absolutely negative in their results. This way of advertising a useless drug, and of trying to fool the profession, cannot be too strongly condemned." Dr. Rothschild is quite right. In the circular, Dr. Rothschild is called a liar because he said he cabled to Europe for some of the "wonderful" remedy, and it appears that Europe cabled back: "Never. Szendeffy." Conclusive evidence of blackest guilt! Of course, Dr. Rothschild being a sensible man, told a dealer in San Francisco to cable for the stuff. The dealer found he could get it in New York, so he wired there and got it. Dr. Rothschild did not know or care whether it came from Europe direct or from New York and did not know of the source of the dealer's supply until after this amusing incident had occurred. Great Heaven! What an awful, soul-wracking sin, what a monumental lie was perpetrated! Dr. Rothschild said he got his supply from Europe because he told the dealer to cable for it; the dealer got it for him from New York; therefore, Dr. Rothschild is branded a liar and "the profession of California" is asked to do dreadful things to him; but whether he should be boiled in oil or merely bisected, the circular does not state. It is indeed too bad that a company or an individual may no longer be permitted to foist remedies "absolutely negative in their results" upon a confiding profession. It is likewise unfortunate (for the promoters) that there are medical journals quite willing to print the truth—and competent observers who are quite willing to observe the facts and prepare them for publication.

The impudence of the "Dioradin Company" in sending out such a circular is monumental. Their

work is unbelievably crude, particularly in view of the following facts:

On careful examination, "dioradin" ("radio-active metholated iodine") was found to give no radio-active response.

Dioradin was submitted to the Council on Pharmacy and Chemistry and was "refused recognition because of the exaggerated and unwarranted claims made for it."

We are much obliged to the Dioradin Company for sending out the circular and thus giving us an opportunity to emphasize the *facts* above italicized.

"Please do not speak to us any more!"

THE SECOND DECADE.

The year 1912 brings to a close the first decade in the life of the reorganized State Society, and also of the CALIFORNIA STATE JOURNAL OF MEDICINE. Some of the years—particularly the early ones—were, to put it mildly, stormy; bad weather was the prevailing condition. So many things happened, so uphill was the work and so constantly did the stones for building roll down hill a bit upon the slightest provocation, that one thought came to be the regular daily opening of consciousness: "What will happen next?" The question did not arise, "Are we in debt?" it was always "How much do we owe?" The early years were indeed rough and stormy. We were fighting for the promotion of a few truths, and to get any truth disseminated demands repetition, reiteration—hammering home. In the hammering process, some one would occasionally get hurt; libel suits in plenty were threatened; a few were actually filed; none ever came to trial. With the close of the decade we find a great change; comparative quiet has followed the storm, though occasionally there is a little disturbance; we no longer ask "How much do we owe?" but with confidence say "What is the bank balance to-day?" That helps a good deal! But because the Society is in good condition and fairly prosperous, let us not for a moment think that the work is done. The foundation of the building is built fairly strong; now let us, during the next decade, see that the good, solid building operations continue; let us continue the work until we have a really complete and thoroughly well-built State Society; one that is so strong, so valuable to its members, so active and so continuously alive to their interests and for the public welfare, that no practicing physician in the state can afford *not* to be a member. There are many ways in which the State Society can add to and increase the benefits which it gives to its members; a number of these have been under discussion for some time past, and doubtless the coming year will see some of them begun. Because we are fairly well and fairly prosperous, don't sit back and knock; keep on building. We can make this Society the strongest thing of its kind in the land, and the most representative body of medical men organized for medical progress and public health in the United States—if we will but keep building, each doing his little best to help and not to hinder; to construct and not thoughtlessly condemn. Criticism is more valuable than compliment, for honest criticism helps in constructive effort. Criticize, suggest, recommend or kick as you will; but *let it be for the good of the Society;* let your motive be constructive and not destructive. To every member of the Society and to every reader of the JOURNAL, we wish a most prosperous New Year of higher ideals and greater achievement.

BY HIS WORKS.

Elsewhere in this issue of the JOURNAL will be found a résumé or abstract of some documents published as Bulletin No. 22 of the Los Angeles County Medical Association. Senator Works, the distinguished Eddyite representative in the United States Senate, took several hours of the Nation's time to address the Senate more or less on the subject of his health, that of his wife and the health and habits of his son, the inefficiency of "regular" doctors and the more than marvelous efficiency of "science"; by the latter term is meant so-called "Christian Science," or Eddyism. This JOURNAL has no quarrel with the honest belief or religion of anyone, so long as that belief does not endanger the public health. There is no cause for quarrel with a man if he thinks he has been chosen to be the executioner of the human race; the quarrel starts, however, when he strives to put his idea into practical operation and begin the killing. To many distinguished persons, Eddyism is really a sort of religion; we have no quarrel with them; we respect their views as we do the religious views of all honest persons who have such honest views. It is only when they try to imperil the health of the general public by forcing a return to the insanitary conditions of six thousand years ago, that a grave issue arises. In regard to a Public Health Department bill, or the so-called Owen bill, the attitude of the medical profession should be purely advisory. We can explain to the general public the facts in regard to disease dissemination and prevention; it is then for the public to decide what it shall demand for itself. What the public will demand when it fully understands the truth, there can be no doubt in the mind of a reasonable man; but it will take no little time for the thinking public to get hold of sufficient facts and draw the natural conclusions from them. At the present time we find the general public divided into four classes. One, a very small class, as yet, which understands the situation and is anxious to have the national government take charge of all public health work. Another—and by far the very largest class—which knows nothing about it all, cares less, and is more or less confused and mystified by the whole thing. Another class composed of the same elements which fought the passage of a Pure Food Bill so successfully for a number of years; the impure drug and worthless nostrum manufacturers, the adulterated food manufacturers and the like. And finally, the Eddyites who have, unfortunately for themselves, seen fit to take as a bedfellow the "League for Medical Freedom"—as the elements in the third class have seen fit to call themselves. We, as a pro-

fession, must allow these four elements or classes to fight the thing out among themselves; if we undertake to aid in the fight they all, unthinkingly, turn upon us and say that we must have some object in it. They say this because it is almost impossible for any layman to appreciate the fact that anyone can do anything unless there is "something in it for himself"; they cannot do so themselves and they think no one else can! In the Los Angeles pamphlet already referred to, ex-Senator Chandler asks Senator Works the following question: "Is Mrs. Harriet W. Works, C. S., a recorded practitioner at Los Angeles, Cal., 520 Hellman Bldg., your wife?" In addition to this we would like to ask Senator Works another question—though we know he will not answer it: "Is the Church of Christ, Scientist, with headquarters in Boston, paying you anything for your public utterances against a public health bill?"

EXTRA-MEDICAL PROSELYTING.

In these days when publicity on large questions seems to be the tendency of the hour it is of great interest to the medical world to note that trend in so far as it affects medical affairs. Our profession and medical considerations in general have certainly not suffered from lack of the calcium ion which illuminates. Dr. Wiley, "Christian Science," the Owen bill, tuberculosis work, vivisection, etc., are very much battered subjects, and our own good Senator Works (not Senator Good Works) has had a pretty bit of notoriety thrust upon him by his tampering. All these mental pabula, however, have been served without anything to make them savory until of late there have appeared from the pen of a brilliant Frenchman, Brieux, two plays which deal with hot coals, these burning subjects being the problem of artificial abortion, and our old friend, syphillis. One play is called "Maternité," the other "Les Avariés," or as Mrs. Bernard Shaw has translated them, "Maternity," and "Damaged Goods." Rather socialistic in tone is the first, for it most cleverly tries to justify the abortionist and the victim (the patient in the play can be properly called the victim, for she dies as the result of the abortion) and leaves us tremendously uncertain in our own pious minds, as to whether our orthodox attitude has after all been a logical one. The second play deals frankly and without reserve with the subject of syphilis in its most far-reaching effects and presents besides the infected father, the infant which has inherited the disease and in turn transmitted it to the wet nurse, to say nothing of the young mother who, of course, is sacrificed.

A mere recital of the stories seems bald and unspeakable ugly, but the author has employed an artistry born of genius, and the plays are achieving a tremendous vogue abroad. Here at last we have some medical matters brought to our notice in a form more compelling to the attention than anything *Collier's Weekly* or even our own *Journal of the A. M. A.* has had to offer, and since Ibsen's "Ghosts" we cannot recall anything so powerful.

The purpose of this, however, is not to impose a review or critique in these editorial columns but to think of the expediency of the arts dealing so seriously with these matters. Literature and drama in striking form presenting these problems as medicine illuminates them, it may be that through that channel and by those means the world will make the steps forward our profession works for so energetically and longs for so ardently. On the other hand the danger of the usurping of such subjects is that society will be as much misled as led, for the genius of Brieux presents truth, while on the other hand the dilettantes such as Bernard Shaw rush in with sophistries where angels fear to tread. But the greatest danger lies in the largest class of all, the panderers, who write ugliness for people to read, relying on that large amount of morbidity in people which makes them visit morgues, and for the same reason devour such literature. Of such stuff is made the class of novel of which we can cite Kauffmann's "The House of Bondage" as a type. Far be it from us to settle these affairs ex cathedra, but while we watch the world and its leaders work in our domain, let us commend and admire where commendation and admiration are due, but let us protest a bit at having the ugly subjects "dished up with too much damnable iteration." H. I. W.

SALVARSAN—A WARNING.

Salvarsan is too good a remedy in which to lose faith, even in the least. The tendency of a number of excellent men would seem to be to still consider this as a better remedy for syphilis than mercury and kali iodid. The frequent repetition of the dose of salvarsan in those cases that do not respond to one, two or three doses is becoming part of the knowledge of the layman, and he is losing, to a great extent, the faith that was engendered by the extraordinary claims for the drug in the beginning. This is due greatly to his comparison between what he was led to expect and what he now believes he can expect; therefore he is inclined to put much less faith in this remedy than does his physician. It is not an uncommon thing to have the patient, for instance one in whom the lesion is of the mucous membrane, particularly on the tongue, and is persistent, or one in whom a palmar condition resists all other methods of treatment, object to receiving the injection of salvarsan. These examples are given as they are so eminently amenable to the good effects of salvarsan and are frequently absolutely resistent to other lines of treatment. The physician is thereby handicapped by this frame of mind on the part of the patient. The important point is this: A good, sensible view of salvarsan should be taken by the physician. It should be considered preeminently as a symptomatic treatment and a marvelous one, and not as a cure-all. Let us not dispense with the time-honored remedies, which are so necessary and which so frequently act far better after the use of the arsenic. G. D. C.

DRUG THERAPY.

Recent investigations concerning the action of the alimentary secretion on members of the digitalis group lead to the suggestion that the whole subject of variability in drug action is in need of discussion and experimental verification. That drugs lose their initial effect by repetition, that the same drug may act differently on different individuals of like weight, that even in the same person the reaction may vary from time to time, are commonplaces known to all who have clinical experience. We dismiss these facts with such words as "idiosyncrasy" and the like, but in so doing give no explanation of their nature, and in fact paralyze mental effort by the suggestion of an answer. Yet these are material facts, they lie in the field of experiment, and the methods open to us are not more difficult than those that have yielded such brilliant results in biology and bacteriology. Along efforts in this direction we recall the beautiful and convincing experiments of Ehrlich, who demonstrated that pathogenic organisms produce antibodies against the drugs used for their destruction; that a failure to attain the lethal dose continually adds to the difficulty of destroying the invaders who become increasingly immune to the drug used against them. Although the doctrine of the *sterilazio magna* has only been urged against the pathogenic protozoa, its principle doubtless extends in many cases to the body cells, thus explaining the need of increasing dosage to produce a given effect. Variability in drug action in the same individual may in many cases be due to varying conditions of the alimentary secretions. Thus Dr. Worth Hale in a paper read before the Section of Pharmacology and Therapeutics at the last Annual Session of the A. M. A., showed that the digitalis group of glucocides underwent deterioration when subjected to the prolonged action of gastric juice. Furthermore, as this loss of activity seemed chiefly due to the hydrolysing action of the acid, we can readily see how variations in that very variable secretion would account for marked differences in the therapeutic action of the drug. Similar decomposition was found to occur with strophanthin, and in the case of the latter, theory is sustained by the well-known fact that the dosage when administered hypodermically is disproportionately small. This is but the commencement of a line of investigation that may ultimately do much to clear up anomalies and uncertainties in drug therapeutics. Finally, how much have we yet to learn of the biochemistry of the liver, that organ that stands watchman at the portal of the systemic circulosa, holding up, rejecting or transmuting the poisons brought to it? How much of food and drug idiosyncrasy is due to its hypo or hyperactivities? H. D'Arcy Power.

MEDICAL DEFENSE.

No criticism of the practices of liability insurance companies has been uttered by the State Society or voiced by the Journal at any time since we, as a Society, undertook the co-operative defense of our members in alleged malpractice suits. Some of them are mightily open to criticism, however. (In passing let it be noted that the defense has won every suit defended by the State Society since the work began.) It has reached our attention that some solicitors are urging our members to insure, or to keep up their policies in insurance companies, and to that end are making what we may be permitted to call false statements. They use as an argument for keeping up the policy, the false statement that the Society will not or cannot put up a bond in case of an appeal from a verdict for the plaintiff. This is absolutely untrue. The State Society will put up the statutory bond when required and do it at least as promptly as any liability insurance company. Last year, in our injunction suit against Kaplan, we were required to file a bond for $5,000.00; the bond was filed within an hour. Of course there can be no objection to your carrying insurance if you care to do so and wish to pay this money into the coffers of an insurance company. But there is no company that will or can give you any better defense than the mutual defense offered by your fellow members of the State Society. Think it over. When the agent makes these peculiar statements to you, write to this office and ascertain the truth of the matter.

HOSPITAL DEPARTMENT.

In another part of this issue will be found an article by Dr. Wm. R. Dorr, at present superintendent of St. Luke's Hospital and formerly Warden of the City and County Hospital of this city for three and one-half years, dealing with the different hospitals of San Francisco in a very general way. Hospitals having become so important an adjunct to the armamentarium of the medical profession and so comparatively little being known by the medical profession at large as to the hospital facilities, hospital changes and hospital news of the various cities and localities, the Journal will to a certain extent keep its readers posted as to the advancement of construction, management and equipment of the various hospitals throughout the state and disseminate news concerning hospitals just as it does of the various county societies.

The article in the present issue deals with the hospitals of San Francisco, giving in a general way their present status. We feel that the Journal should cover the state in this line and not only give the general news of the hospitals but also technical papers giving the details of hospital management, hospital economics, and hospital construction. We would therefore invite hospital workers throughout the state to contribute to this department. A statement of the new fixtures that have been installed, the accounting methods in use, the check system It has been produced also in the mouse, monkey, employed and the general basis on which the different hospitals are run would be undoubtedly of

value to the many physicians and surgeons connected with the management of hospitals, and by increasing the efficiency of the various hospitals be a great boon not only to the medical profession but also to that branch of the public from which the medical men gain their living, i. e., "the patients."

SPOROTRICHOSIS.

During the past few years increasing numbers of cases of sporotrichosis have been reported in the French and German journals, but comparatively few reports have appeared in the English or the American literature. The earliest known cases, however, were described in this country by Schenck (*Johns Hopkins Hospital Bulletin,* 1898) and by Hektoen in 1900. In 1906 de Beurmann and Gougerou made detailed reports and studies of cases (Ann. de Derm.) and since then the disease has been much investigated. It is probable that with a more widespread knowledge of its nature more examples of the infection will be recognized. Owing to the resemblance of some of the lesions to syphilitic gummata, tuberculosis cutis, blastomycosis, or deep seated coccogenous affections it is probable that cases have escaped notice.

Sporotrichosis is a chronic disease characterized by the presence of subcutaneous abscesses (containing grayish yellow pus), and nodules, of slow evolution and very indolent. There are fistulae from deeper abscesses and their openings have swollen margins. The crateriform lesions are especially characteristic. Visceral involvement has been observed. Generally there is no adenopathy and the patient's health is good. In most of the French cases the lesions consisted of multiple nodules and abscesses (five to thirty or more) and widely distributed without apparent order. The subcutaneous nodules which are at first hard and resistant, soften in two or three months and become adherent to the skin which becomes red or violaceous over the lesions. Finally perforation occurs, with the discharge of pus. After resolution of a nodule, often a violet cicatrix or a keloidal scar remains. The disease has occurred in patients afflicted with syphilis and also in patients having tuberculosis. Histologically the lesions resemble at times syphilis and at times tuberculosis.

The causative organism, the sporothrix, was discovered by Schenck who found that it would grow quite readily on various media and could easily be identified by that means. It is exceedingly difficult to demonstrate it in fresh specimens. The sporothrix occurs as a fine mycelium with long partitions and oval spores and there are terminal filaments which are capped by several spores. On Saboraud's peptone-agar it grows readily. The tubes should not be capped and should be left at the room temperature. The organism has been shown to grow on various animal structures (flies, caterpillars, larvae, etc.), and upon vegetables. J. N. Hyde observes that "the mold may be found in the vicinity of barnyards and untilled fields near outhouses." The disease is readily produced experimentally in the rat, in which animal an early orchitis is characteristic. cat, and guinea pig. Strange to say, the last named animal is very resistant to this form of infection. In these experimental inoculations many visceral complications have been produced. A spontaneous sporotrichosis has been observed in the rat, mule, horse and dog (three puppies in one litter).

The late J. N. Hyde and D. J. Davis (*Journal of Cutaneous Diseases,* July, 1910), in an exhaustive illustrated paper on the subject described a human case which appeared to have originated by infection from a horse. They also demonstrated that there occurs an epizootic lymphangitis in horses, due to the presence of the "sporotrichium Schenckii" and "should be described as instances of sporotrichosis." The authors further observed that the records of five previously reported human cases of sporotrichosis showed that the patients had been exposed to horses. It is probable that the infection has occurred without its nature having been recognized. An instructive article (with references) concerning this disease appeared in the *British Journal of Dermatology,* Aug., 1911.

The condition is very persistent, but potassium iodide applied locally in solution and taken internally will usually bring about a cure within four months' time. HARRY E. ALDERSON.

PUBLIC HEALTH AND ITS FOES.

The introduction into Congress of a bill by Senator Owen to create a Department of Public Health, a few years ago, aroused immediate opposition from certain questionable sources. The same interests which had opposed the Pure Food and Drugs act, opposed this bill; and probably for similar reasons. But this time they were more open in their opposition. They organized what they were pleased to call the "League for Medical Freedom," made a loud cry about the "doctors' trust" and assailed the medical profession and the American Medical Association. It was soon apparent that the Eddyites were associated with the questionable interests going to make the "League," but the Eddyites did not come out quite so openly. In fact it was some time before they disclosed their position. It is alleged that the "League" spent not less than $25,000.00 a week in supporting its lobby in Washington and in stirring up opposition to the Public Health Department bill; a good deal of this must have been spent in sending out "canned"—and tainted—news to such papers as would take it. It would be interesting to know how much, if anything, was contributed by the Eddyites.

The Eddyites' position was clearly disclosed on July 6th, 1911, when John D. Works, of Los Angeles, Senator from California, made a most remarkable and unparalleled speech in the Senate of the United States. In the course of his remarks he attacked the American Medical Association, and the medical profession generally, as being parties to a gigantic scheme to control all medical healing or treatment of the sick; to create a "medical trust." He announced his adherence to Eddyism and stated that himself, his wife and his son had been treated unsuccessfully by regular physicians and had been cured by Eddyism. The question of good taste in thus airing his personal ailments and the

afflictions of his family is, fortunately, not one that we have to discuss.

The Los Angeles County Medical Association quite naturally resented the reflections cast upon those physicians in Los Angeles (Senator Works' home) who had attended him, and wrote to the Senator on the subject. Considerable correspondence resulted and all of this, together with a valuable mass of related material, has been published in Bulletin No. 22 of the Los Angeles County Medical Association. We understand from the Secretary, Dr. George H. Kress, Bradbury Building, Los Angeles, that a copy of this Bulletin has been sent to every physician in the State. If you have not received one, or if you desire others, you can secure copies from Dr. Kress. It is unfortunate that the matter contained in this little document cannot be placed in the hands of laymen, for it is the ordinary citizen who is to settle this question in the end. The writer has made many public talks to laymen, in California and elsewhere, and has always emphasized the fact that we shall have no public health legislation until our citizens come to believe that the health of themselves and their children is at least as valuable as the health of their hogs, their cattle and their crops.

Unfortunately, it is not possible to publish the entire contents of this Bulletin in the pages of the JOURNAL, but we shall take the liberty of making certain extracts from it. In reply to the first letter, asking him most politely for the names of the physicians who treated him and his family unsuccessfully, Senator Works sent a most peculiar letter. He refused to give the information, apparently basing his objection on the ground of questionable motives. This is peculiar, coming from one in the highest legislative department of our government, because it is a fixed rule of parliamentary discussion that *acts* and *consequences* are subject to discussion, but not *motives*. Also, like all Eddyites, the Senator separates Eddyism, as he finds it convenient, into its component parts: at one time it is a "religion"; at another it is a system of treating the sick—commercially.

To this letter the Council of the Los Angeles Association sent a long and very courteous reply, stating that, as the Senator had made the statement—and a very definite and positive one—that the treatment he had formerly received from his physicians in California failed to benefit him, it was quite proper to ask him to further state exactly the nature of the ailment, who made the diagnosis and who conducted the treatment. The Council urges that as the Senator gave publicity to a part of the case (the failure of physicians to relieve him) it is but fair and right that he should give publicity to the rest of the case—all of which is merely simple logic.

In discussing the laws governing the requirements fixed for persons who desire to treat the sick or afflicted, the Council further says: "It is in fact altogether inconsistent that less or no knowledge or scientific training should be required of one group of physicians, and higher educational requirements demanded of others." The whole letter is a quiet, dignified discussion of the argument.

Senator Works, in his reply, claims that the Council has abused him and called him a falsifier. He also says "In my speech in the Senate I treated your profession with the utmost fairness and consideration." If you read his speech you will be filled with wonder to know what he could have said that would be unfair and inconsiderate! The Senator further says: "If I have said anything in my speech that is not true it is open to proof before either the House or Senate Committee of Congress." Of course! but how impossible to bring about such an investigation!

If the Senator is correct in making the following statement (and far be it from us to reflect upon his veracity!) it would be a matter of the greatest interest if he would only supply us with a list of the "hundreds":

"Hundreds of your profession have learned that their training and experience has been false and have become worthy and successful Christian Science practitioners." Again we note the dissociation of the elements "religion" and "practice."

The Senator says the physicians who treated him considered his case "From their view, and according to their method of treating disease . . . incurable." That is a very definite statement; and yet he will not give the names of the physicians or the "incurable" nature of his case! But the Senator, for one reason or another, does not give any further information as to the nature of his trouble or those who attended him. He would like to have a Congressional investigation, not an investigation at home.

The Bulletin also contains extracts from a number of publications relating to public health and the attacks upon proposed public health legislation by the "League for Medical Freedom" and others. There are also a couple of letters from ex-Senator Chandler to Senator Works in which he asks Senator Works to be more specific in his information. But Senator Works' only reply is to question the motives of the query; again the most unparliamentary attitude. Mr. Chandler closes his first letter with this pertinent postscript:

"P. S. Is Mrs. Harriet W. Works, C. S., a recorded practitioner at Los Angeles, Cal., 520 Hellman Bldg., your wife?"

But Senator Works makes no reply.

The good that is in Eddyism, the value of suggestion and auto-suggestion (being as old as the human race) will live forever; the absurdities of it will die a natural death. It is not for us to argue or discuss the question; argument would be absolutely profitless. In the long run the average citizen may be depended upon to do pretty nearly the right thing; it is for him to decide whether he wishes this "freedom" to endanger the health and the life of his child or whether he wishes a national department of public health that will insure at least as much consideration for human health as for the health of his cattle, his hogs and his crops. Our profession can place before him known facts; he can then weigh these against theories, dreams, false statements, tainted motives and unsound judgment; the result is certain, though it may come but slowly.

P. M. J.

ORIGINAL ARTICLES

THE EYE IN ITS SEMEIOLOGICAL ASPECT.*

By WM. F. BLAKE, M. D., San Francisco.

(Continued from page 507, December Journal, 1911.)

Tumors of the pons and medulla oblongata we will consider together, since the one region except for surface markings merges insensibly into the other. A lesion of any size situated at the lower level of the pons could easily implicate all the nerve nuclei from motor origin of the fifth above to its sensory origin below, including the nuclear origin of the sixth, seventh, eighth, ninth, tenth and twelfth between. When we consider, too, that all the sensory and motor tracts connecting the cord with the cortex must pass through this crowded area, it is plain that even a small growth will produce a wide diversity of symptoms. In addition to hypasthesias and anesthesias and ataxia and hemiplegia, we may expect paralysis of motor fifth in addition to its sensory loss, paresis of sixth and seventh, deafness, loss of taste from implication of the ninth nerve and paralysis of opposite side of tongue when growth extends low enough to involve the hypoglossal nucleus.

There remains yet to be considered tumors of the pituitary body, but as this particular region is deserving of a much more extended consideration than can be given here, I shall not attempt any discussion of it. Before dismissing the subject, however, I would call your attention to the fact that other eye changes than bitemporal hemianopsia may result from growth here. Cases are on record where a homonymous lateral hemianopsia has been caused by an asymmetrical development of the tumor to one of the other side. And as a passing thought it may be that some of our so-called idiopathic optic atrophies have resulted from a compression of the chiasm from an acute enlargement of the hypophysis. By the recession of the gland to normal size there would disappear the headache and perhaps all constitutional symptoms, only the atrophic nerves remaining to leave us in conjecture as to the original cause.

With the one exception of headache, choked disc is the most common symptom of brain tumor. The tables of various investigators, as Martin, Paton, Gowers and de Schwernitz, show it to be present in eighty to eighty-five per cent of all brain tumor cases. Gowers says the value of optic neuritis as an indication of intracranial tumor is very great; in at least four-fifths of the cases of brain tumor it may be the only unequivocal sign of organic intracranial disease.

While every one agrees that the general significance of choked disc is very great, yet its value as a localizing aid is open to grave question. Sir Victor Horsley stoutly maintains that the amount of papilloedema, the presence or absence of hemorrhage and such secondary changes as hyalin deposits and macula star are of very great localizing importance and that there is a very constant ipsolaterality between the side of tumor situation and the greatest fundus changes. In a paper read before the Toronto Medical Society this past October, Horsley recounts eighteen cases of brain tumor operated in the past year by him, in which he found a marked ipsolaterality of fundus changes in sixteen cases. Mr. Leslie Paton in an analysis of this same series of cases is in absolute disagreement and finds the fundus changes about equal on both sides, if anything with a slight percentage in favor of contralaterality. Cushing and Bordley, in spite of the fact that in 70% of cases studied by them the greatest change in the optic disc was on side homolateral to the tumor, still believe this sign to be misleading and that a careful and day to day observation of the eye grounds will show changes as frequent and as great in the contra as in the homolateral eye. This opinion is supported by de Schwernitz and Frazer.

However, as we are as much interested in the very earliest signs of oncoming choked disc as in its localizing value when present, I will briefly call your attention to some anatomical conditions which are changed very early. The physiological cup is the space left by the arching and diverging fibers as they leave the nerve head. It may be large or small, depending again on the arrangement of nerve fibers. Since the greater proportion of nerve fibers pass over the nasal side of the disc, their increased number demand more space, in consequence the physiological cup is pinched somewhat and to the nasal side is contracted to a rounded apex. With the onset of congestion and edema the change is first seen on the disc at the apex of the cup, the edges of which are rapidly approximated by swelling of nerve fibers and by congestion and overfilling of capillaries and small veins. The cup is changed in three ways. The nasal angle is obliterated, the transverse and vertical diameters of the cup lessened and its white, glistening floor is early changed to a congestive hue by dilatation of small capillaries in its choroidal layer.

Gowers, Horsley, Parsons, Bordley and Vierhoff have all called attention to the earliest swelling of the disc edge and adjacent retina on the upper nasal side and that the last sector of the disc periphery to be involved is the lower temporal quadrant. Parsons and Vierhoff have demonstrated the histological reason for this in the presence of this region of an increased amount of loose connection tissue, forming here a transitional element between the perineurium and the highly organized tissue of the retina.

In the normal disc the higher the nerve head the deeper the cup, under pathological conditions with swelling of nerve head the cup becomes narrower and more shallow. Perhaps the next objective change to be made out is a modification of size and contour of the retinal veins. Often in high hypermetropia we see a tortuosity of mild degree, but always parallel to or in the plane of the retina. The tortuosity incident to congestion and choking of the disc is more pronounced in character and the curves

of veins seen in and out of retina, that is, at right angles to its plane. An explanation of the star-shaped macula figure was first made by Gowers at the International Ophthalmic Society (Edinburgh) in 1894. He drew attention to the localized foldings of the retina that occur in consequence of edema and what he described as the pegging down of the fovea contralis, and suggests that mechanical tension plus degenerative processes in the retina account for the figure. Mr. Gunn speaks as if the white spots are necessarily due to changes in the deeper layers of the retina as in albuminuric retinitis. Sir Victor Horsley, on the contrary, thinks he has conclusively demonstrated, and in this he seems to be in accord with Vierhoff and de Schwernitz, that the degenerative change is in the nerve fiber layer, that it occurs first near the blood vessels and particularly on the nasal half of the disc.

Turning now from the objective to the subjective evidence, we find that an investigation of the perimetric field for form and color as well as increase in vertical diameter of the blind spot offers something of very great importance. To Cushing and Bordley belong the credit of demonstrating the fact that a contraction of the field for form accompanied by a hemianopsia for colors, or, where this is absent, a marked restriction of the field for red and blue, with an almost constant interlacing or inversion of the field for these colors, is perhaps the earliest and one of the most trustworthy signs of increased intracranial tension.

Since increased intracranial tension may be an accompanying phenomenon of other lesions, as concussion, meningitis and infective processes within the ventricles or so situated as to obstruct their outlets, and since it is also frequently present in chronic kidney lesions progressing toward uremia, this sign must be interpreted in the light of the history of the case, of the other signs of tumor, and in the presence or absence of fever and kidney changes. Swansy says the conditions that produce these changes in the form and color fields are those of increased intracranial pressure only less in extent than that necessary to produce the typical choked disc.

Cushing and Bordley have repeatedly demonstrated that when the early indications of this sign have been accepted and where an early decompressive operation has been done, that this contraction of field for form and this distortion of the relation of blue and red, has been quickly replaced by a return to normal relations. De Schwernitz and Halloway have shown that in addition to the change in form and color fields, there is a fairly constant increase in the vertical diameter of the blind spot. A study of the tables published during the past three years by Cushing and Bordley, by de Schwernitz and Holloway and by Leslie Paton show that these early subjective changes, while not constant (few signs of disease anywhere are), yet are present in so very great a majority of cases as to make them of the very greatest value as an indication for early operative treatment.

A PLEA FOR THE EARLIER RADICAL SURGICAL TREATMENT OF GASTRIC ULCER.*

By H. B. A. KUGELER, M. D., San Francisco.

Introduction.

The Bible is the foundation of Christian theology.

Sects are founded on interpretations of the Bible, often twisted to suit the individual interpretation or incorrectly translated from the original.

The first ones to resent the statement that the publications of the Mayo Clinic are the Bible of American Surgery would be the Mayos themselves, no one appreciating more fully than they do the transitional state of modern surgery. Nevertheless, with their enormous material, their able staff of assistants, guided by men of genius, and having an excellent survey of the world's literature at hand, their works are at least for many of us, a sort of confession of faith.

A good sermon consists of a text, with its exposition, the same being fortified by as many quotations as possible from the Bible itself or the writings of the Fathers. The same construction should apply to a good medical paper.

During the past ten days I have learned two things:

1st—That very few readers of papers before this Society comply with the rule that a copy of their paper should be filed in the library of the society.

2nd—That there really are members who do read these papers.

In this way I learned that considerable criticism had been made of my paper on account of its quotations.

As I make no pretense to being a pathologist or a great diagnostician I have consulted the best authorities at my command.

After hearing this criticism I reread very carefully the papers of Kroenlein, Payr and Neudorfer, translating such sentences as I felt covered the ground I wished.

After making a clean copy of the same I found that it corresponded so closely to what I had already written that I retained the original wording.

Kroenlein in 1906 draws elaborate conclusions from a series of 101 patients that had been under medical treatment for a period varying from five to forty-five years. Payr only three years later, with a series of more recent cases, takes a more radical view. Neudorfer's paper though based on only eight cases was listened to and discussed with great earnestness at the 1911 meeting of the German Surgical Congress. Careful reading of the same would make one believe that he had consulted the same authorities that I have. Furthermore, I looked up some of our recent American papers on this subject and while the wording was different, the sequence and data so closely resembled what I have quoted that the source was unmistakable. In fact, the wording was occasionally so arranged as to give an entirely differ-

* Read before the General Section of the San Francisco County Medical Society, Nov. 14th, 1911.

ent impression from what the original intended.

I will conclude these prefatory remarks by saying that if I have committed a crime it has been that I have had the honesty and decency to put quotation marks around the paragraphs that I have quoted instead of taking liberties with the same. My idea is not so much to teach as to call attention to the general neglect of the teachings of those whose experience should guide us.

It cannot be too often repeated, line upon line, and precept upon precept, until it passes into the currency of a proverb, "The cure of cancer of the stomach lies in the early surgical treatment of ulcer." This paraphrase of the words of the immortal Burke is my excuse for taking a few moments of the time of this society.

I cannot present a long array of statistics as I have neither a university clinic nor a hospital service; however, during the past three or four years I have had quite a series of cases of carcinoma of the stomach. As I went over the histories my attention was called to the fact that in case after case the symptoms of ulcer extending over months and years seemed startlingly clear. Still the patients had wandered from one physician to another, dieted and drugged, until they gradually drifted into the condition of inoperable carcinoma.

Particularly atrocious was the case of a young woman of twenty-six years, who came to me in September, 1910. For two years she had been seeking relief from her pain and increasing exhaustion. At operation the pyloric end and lesser curvature of the stomach were found indurated and adherent. A posterior no-loop gastroenterostomy was all that could be done for her. One of the lymphnodes was removed and found to be carcinomatous in the Ophuls' Laboratory of Stanford University.

Then followed the usual harrowing story, unusually prolonged in this case: for five months marked relief and increase in weight; then return of pain; distress after food and a rapidly growing tumor. The end came ten months after operation.

When a surgeon sees case after case like this, he must ask himself, "Why is it?" Even the pathologists are aroused. One of my friends in the medical department of the University of California came to me the other day and wanted to know why the surgeons do not take the treatment of ulcer of the stomach away from the internists, who claim they cure the ulcer; and then the patient returns with a carcinoma. It is certainly interesting to learn that the pathologists are awakening to this fact. During the past twenty-five years, aside from the direct benefit that has come to suffering humanity from modern surgery, another very important result has been the light that has been thrown upon pathology and physiology. It has been clearly demonstrated that there is a marked distinction between the pathology of the living and the pathology of the dead.

A few weeks ago I received from Rochester, Minn., a package of reprints, among them two by Wm. J. Mayo entitled "Some Observations on the Disorders of the Stomach and Duodenum with Special Reference to Ulcers" (*Boston Med. and Surg. Jour.*, Vol. LXIX, No. 14, pp. 477-482). The other, "Diseases of the Stomach and Duodenum from a Surgical Standpoint" (*St. Paul Med. Jour.*, Jan., 1911).

A number of the points that I had made in the preparation of this paper were stated so much more clearly and authoritatively that I have rewritten my paper and taken the liberty of quoting certain passages from these reprints, for which I wish to acknowledge my indebtedness.

One of the papers begins, "Few people with chronic disease die from the malady from which they suffered during life." This bears out the previous remarks concerning the difference between living and dead pathology.

"Twenty-five years ago we were taught that simple peptic ulcer was a disease of the stomach more common in women and that it was usually multiple. It was supposed that the duodenum was very rarely affected. Later investigation has shown that the ulcers referred to were a form of acute ulcer and that they were especially frequent in the overworked, underfed and badly nourished female. Modern social conditions have, however, changed gradually for the better and this type of acute ulcer with a high percentage of mortality so familiar to the older pathologists, is now rarely seen."

"Acute ulcers are usually toxic and the patient either dies or there is recurrence within two or three weeks. They are often multiple, sometimes with a large number of perforations at one time. Borden demonstrated that acute ulcers of this type could be produced experimentally by making an extract of the stomach scrapings of a normal guinea pig's stomach and injecting it into the normal rabbit. In a very beautiful piece of work he showed that these ulcers were due to self digestion; the gastro toxic extract had in some way taken away from the stomach of the second animal the ability to protect itself against auto-digestion. He could prevent this action by keeping an alkaline solution in sufficient quantity in the stomach to neutralize the gastric juice."

"Turk (Int. Med. Congress, Budapest, 1909) showed that by feeding animals a large quantity of filth and colon bacteria he could produce multiple acute ulcers in the experimented animals. In this manner we can explain the acute multiple ulcers of the chlorotic female and the hemorrhagic erosions, which cause severe hemorrhage in cirrhosis of the liver and some blood diseases, but never experimentally nor clinically have these acute ulcers been found to be responsible for the chronic, calloused ulcer of the stomach and duodenum."

"The whole question of calloused, chronic ulcer must be reconsidered. Up to the present time the statistics of John Brinton, which were compiled in the early sixties, and those of Welsh, compiled in 1885, have been accepted as definitely establishing certain facts. The work done by these two men is a splendid example of pathological research of their time. The actual pathological examinations upon which these statistics were based, however, were not made by these eminent authorities but were merely compiled by them. Welch's statistics covered the findings from the autopsy material from ten large German clinics, during a still earlier pe-

riod some years prior to the publication of the paper. These statistics represented what was well known at that time but by no stretch of the imagination can we consider them as representing the knowledge of to-day any more than we can settle other mooted questions in medical progress by data accumulated twenty-five or sixty years ago."

For purposes of comparison, Mayo takes one thousand cases operated upon at St. Mary's Hospital for gastric and duodenal ulcer. Of this 74½% were males and 25½% were females. Kroenlein had 57.6% males, 42.4% females. Since June 1st, 1906, 201 cases were gastric and 401 duodenal, and 19 had one or more ulcers of both the stomach and duodenum. More than 90% of ulcers of the stomach are situated along the lesser curvature. The ulcer is sometimes more extensive on the posterior wall; less often on the anterior. The induration often extends from the ulcer downward upon the anterior and posterior walls like saddle bags and therefore is termed "saddle ulcer."

"Ulcers not along the lesser curvature are more frequent on the posterior than the anterior wall of the stomach. While the induration may be very considerable in extent, the rule is that the actual ulcer is not larger than the end of a slate pencil to that of a nickel, averaging about the size of the end of a lead pencil. Most ulcers which are larger than a silver twenty-five cent piece are undergoing malignant degeneration."

I show you here a typical specimen of this condition; also a plaster cast of the same prepared by my friend, Dr. Lee, of the Pathological Department of the University of California.

"The diagnosis of gastric or duodenal ulcers is usually not difficult and the differential diagnosis between a gastric and duodenal ulcer can usually be established, but it cannot always be done nor is it essential that it should be.

"In the early stages of gastric and duodenal ulcer hyperacidity and hypersecretion are prominent features and the pain is usually in the pit of the stomach. In some cases of duodenal ulcer the pain passes to the right, and in some gastric ulcers to the left. The location of the pain, however, is often misleading in this respect. Hyperacidity is often not as well marked in gastric ulcer as in duodenal, and generally speaking, in both gastric and duodenal ulcers hypersecretion is more persistent than hyperacidity. The pain in duodenal and gastric ulcers in the vicinity of the pylorus usually comes on three or four hours after meals. In gastric ulcers of the body of the stomach the pain comes on earlier following the meal. And while duodenal and antral ulcers are almost regularly relieved by taking food, in ulcers of the body of the stomach food sometimes gives rise to pain. The belching up of sour fluids from the empty sour stomach has a very deleterious effect upon the teeth and often these patients will have the incisor teeth of the upper jaw dissolved away nearly to the gum."

"Hunger-pain and food-relief are very typical of ulcer. The patient who goes to bed at night with a glass of milk and a cookie, or baking soda, because he expects to wake up in the night with a peculiar gnawing pain in the stomach; sometimes raising up a mouthful of bitter, sour, burning fluid, will almost regularly be found to have ulcer—and usually ulcer of the duodenum. It is curious to note in some cases the regularity with which the pain appears in the night. For months at a time it comes on at almost identically the same hour."

As to hemorrhage: not over 30% of Mayo's cases gave a clear history of hemorrhage although by asking leading questions regarding black stools, etc., nearly 70% of histories of hemorrhage can be procured. Of all the prominent signs and symptoms of ulcer hemorrhage is the least valuable. As to occult blood: if found, it is merely up to us to guess where it came from. If it is corroborated by other findings of substantial nature it has value, but of itself it means little.

"It is always advisable to examine the gross specimen brought up by the stomach tube from the fasting stomach. The yellowish, sour, pungent fluids, the result of hypersecretion and hyperacidity, are in marked contrast to the dirty, sickish, coffee ground material so often found in cancer."

"Laboratory diagnoses based upon analysis of the stomach contents are valuable but they are not the controlling factors in the diagnosis and must be corroborated by other signs and symptoms."

"In the later stages of the disease obstruction supervenes and the finding of food remnants eight and twelve hours after meals, or the habitual use of the stomach tube to remove these undigested articles is not only most important in diagnosis but furnishes a surgical indication which should not be ignored. If the patient is told to take with his evening meal some soup containing half cooked rice and a penny's worth of raisins, remnants of this food will be found in the stomach the next morning if obstruction exists."

"Gastric and duodenal ulcers may exist for years. The disease usually begins in the young adult who develops a history of stomach trouble, marked by bitter, sour, acid, belching and regurgitation coming on from one to three hours after meals and relieved by food. With or without treatment the symptoms will abate and in the early history will disappear for months or years at a time, leading to the delusion that the ulcer is cured. These spells recur at closer and closer intervals until in the later stages obstruction supervenes, and as the acids then diminish and blood is sometimes present, the patient is thought to have cancer."

"Mistakes in diagnosis are more often the result of the lack of examination than the lack of knowledge. Ninety per cent. of supposed diseases of the stomach are not entities but rather groups of symptoms masquerading as diseases and named accordingly. Gastroptosis, gastric neurosis, atonic dilatation give rise to much gastric distress. However, the stomach is not the offender but rather are the symptoms due to an unstable nervous system and to congenital physical defects. Some of these poor patients had gastro jejunostomy and other stomach operations performed for supposititious ulcers, much to the discontent of the patient, the physician and the surgeon; and in the records of these cases "failure of operation to cure the ulcer" was put down, when it

should have been recorded "unnecessary surgical interference."

Patients come with the story of pain in the stomach, headache and vomiting, and the stomach subjected to all refinements of examination and treatment. Many of these are due to cardiac and renal disease. Gastric symptoms sometimes antedate the true signs of pulmonary tuberculosis; arteriosclerosis is commonly attended by gastric disturbances; pernicious anemia has frequently been mistaken for carcinoma of the stomach. Patients with brain tumors have gone through the same story. Then again in the abdominal cavity, in appendicitis—acute or chronic—hernia, gallstones, marked disturbances of the stomach are sometimes the chief or only symptoms of the disease. The patients go on for years complaining and receiving treatment for indigestion and dyspepsia.

As to the treatment: For many years we were led by the teachings of Leube and Lenhartz, who cured gastric ulcers, and many still believe that such is the case. But these treatments were instituted at a time preceding the modern surgical investigation of stomach conditions. If you will look at that specimen and consider that it is located at a point that is constantly exposed to the impact of the food as it tries to escape from the pylorus, it is impossible to believe that medicine ever could cure such a condition.

As I said before, the number of cases of neglected gastric ulcers that have come under my personal observation during the past few years have induced me to read this paper. It is simply a repetition of what has been said again and again but it is evident that we do not give heed to what we read and the only way to impress the majority of the people is by addressing them personally. In looking over the *Index Medicus* I find that during the last three years some seventy papers have been written in all the various known languages on the subject of surgical treatment and still little heed is being given.

Five years ago when I visited the Mayo Clinic, Wm. J. Mayo was accustomed to say, "We operate after nine complete and permanent medical cures." On my last visit about a year ago I found that they had cut down this period and operated much earlier.

Wilson and McCarthy found that 71% of over 300 resections of the stomach for cancer showed that the cancer began in ulcer. Keen and Bloodgood state that no case of carcinoma of the skin has been reported which did not begin in some pre-existing lesion, e. g. moles, warts, heat or sun irritation, syphilitic or tuberculous lesions, or the result of chemicals, traumatisms, etc. We are just beginning to find out that carcinoma of the internal epithelial surfaces of the body presents the same condition of pre-cancerous lesion, of which ulcer of the stomach is one.

For some years it was believed that gastroenterostomy was the proper treatment for gastric ulcer. This, however, is not sufficient and should only be used where the adhesions are so dense that a resection or excision of the ulcer cannot be performed. A number of these cases were reported a few years ago where large masses were found apparently macroscopically malignant which disappeared and the patients were apparently cured. I can report the end of one such case that I had seven and one-half years ago. The man had been treated medically for five years, was extremely emaciated, with pain and coffee ground vomiting. For seven years after his gastroenterostomy he was perfectly well, stout and rosy. Then he returned with pain and examination revealed inoperable carcinoma. Kroenlein, who was a staunch advocate of gastroenterostomy, reports 3% subsequent deaths from carcinoma. He very naively says, "Where there is a mucous membrane scar, there may occasionally arise a carcinoma. This result has nothing to do with the operative treatment."

There is one warning of the Mayos that I wish to emphasize from personal experience, and that is, no matter how clear the symptoms of ulcer may be, when the abdomen is opened and no ulcer can be palpated, under no circumstances should a gastroenterostomy be done. Gastroenterostomy is an operation reserved solely for cases where obstruction of the pylorus exists.

My earnest plea is for an earlier recognition of ulcers of the stomach before they reach a condition where only a gastroenterostomy can be done for their relief. I say relief advisedly, for I do not believe that it means a cure. Give the patient one careful, thorough medical course; if the symptoms do not subside or a recrudescence occurs the case is a surgical one. Exception should here be made to duodenal ulcers, which according to the Mayo's statistics rarely become malignant and in these a gastroenterostomy may suffice; however, the experience of v. Eiselsberg, Henle and others (Proceedings of the German Surgical Soc., 1911), shows that even here a cure can only be achieved if at the same time the duodenum is closed.

Rydygier as early as 1882 recommended resection for ulcer. At present there is still a great diversity of opinion as to whether resection should be done or excision of the ulcer with gastroenterostomy and occlusion of the duodenum. The operation must depend on the conditions found in the individual case.

As a fitting commentary on what has been said, listen to this wail of the internists as uttered by Wm. J. Mallory, Instructor in Medicine in the George Washington University, Washington, D. C., and published in the *Journal of the American Medical Association*, November 4th, 1911:

"The results obtained by medical treatment vary greatly in different observers. Their value is impaired by the fact that all are not observed for the same length of time and there are a number of cases in certain series unaccounted for, the termination of which is unknown. The tables of results of treatment by various men, the figures for which were collected from various sources, show how widely results of medical treatment differ:

TABLE OF RESULTS OF TREATMENT.

Statistics by--	Patients.	Cured.	Improved.	Relapsed.	Died.
	No.	%	%	%	%
Sears	183	22.9	59.0	8.0	7.0
Friendenwald	287	66.0	28.0	....	1.0
Bulstrode	500	...	82.0	40.0	....
Russel	47	42.0	44.7	....	....
Schultze	291	89.0	....	....	....
Subsequently .	157	53.0	23.0	15.4	7.0
Lenhartz		....	....	....	2.3
V. Leube..... ..		90.0	6.0	....	2.5
Warren		34.0	....	43.0	10.0

Pyloric stenosis, 10 per cent; carcinomata, 3 per cent.

The mortality is variously estimated (in percentages) as follows:

Musser	8
Regal	from 8 to 10
Lebert	from 8 to 10
Welch	15
Leube	25
Debove and Reynolds	50

"These statistics are uniform in one respect, they indicate that at present the result of medical treatment of ulcer of the stomach is decidedly unsatisfactory. Until the pathogenesis of gastric ulcer is made clear and the treatment based on the etiology is possible, our principal hope for better results must rest on earlier diagnosis. This will be possible when we cease to depend on subjective symptoms for diagnosis and learn to use more universally the tests for occult blood in the feces."

From what has been previously said the diagnosis of gastric ulcer is not as difficult as has been claimed unless we wait for hemorrhage and a gastric analysis, which agrees with our preconceived notion of what it should show.

As to the mortality—compare these statistics with the results of the Mayo Clinic, where since June, 1905, 621 authentic cases of gastric and duodenal ulcer have been operated upon, with an operative mortality of 2.4%. These mortality figures include all the cases operated upon who died in the hospital without regard to the cause of death or length of time after operation.

Discussion.

Dr. W. C. Alvarez: I have listened with great pleasure to Dr. Kugeler's interesting paper. Statistics, generally unreliable, are particularly fallacious in this question of the treatment of gastric ulcer. The cases are rarely followed up long enough to say that they remain cured, and besides we must take into account the condition of the patient at the time of operation, the extent and character of the operation and the thoroughness of the after-treatment, if any. With Dr. Schmoll, I have had the opportunity of studying a patient who was operated upon by the Mayos about four years ago. They excised his ulcer completely and in two weeks sent him home. In answer to his questions as to diet, they told him that he was a well man and could eat what he pleased. He remained well for seven months and then, without any premonitory symptoms of stomach trouble, had a large hemorrhage which laid him pretty low. Every six months since he has had hemorrhages, although in between he has no symptoms of ulcer and he lives on a carefully chosen diet. There is a case that would probably be reported as a brilliant result of operative treatment. I think Dr. Kugeler should have called more attention to this contempt for after-treatment so frequently displayed by the surgeon. The man who has had his ulcer cut out is still an ulcer patient. He should be put on a Lenhartz diet after the operation, and this should be added to in the usual way. We caution our patients to be careful for several years. Another mistake that is often made is to starve the patient by keeping him on the Lenhartz diet too long. Appropriate food should be added as quickly as possible and the patient should gain in weight. Given a thin, anemic patient and the neglect of this precaution may mean the difference between life and death if the surgeon has to be called in later for hemorrhage, or as a last resort. Instead of squabbling as to who shall have the patient, the surgeon and the physician might get better results if they helped each other more in these cases.

A valuable point made by Dr. Kugeler is that there is little to be hoped from gastro-enterostomy unless there is pyloric obstruction. This must be determined by washing the stomach six and twelve hours after a meal. When food can be found in the stomach after twelve hours, there is generally some organic obstruction.

Hemorrhage as a diagnostic sign of ulcer has been overrated in the past. In our experience, most cases of gastric ulcer may be recognized before there is any history of hematemesis, and its presence is not at all necessary to the diagnosis. The fact is that many of the worst cases of bleeding that we have had were found at operation to have no visible lesion of the stomach or any abdominal organ. I remember one girl who nearly bled to death on several occasions. She was opened by Dr. Stillman; nothing was found, and we heard from her several months later saying that she was strong and well for the first time in her life. A few months later we heard that she had had another big hemorrhage. These cases could be multiplied indefinitely. Moynihan explains many of them as due to appendicitis, but we have seen such symptoms in several people who had already lost their appendices.

The test for occult blood is of value only when carefully controlled. I use the benzidin test first, and if this is negative there can hardly be any bleeding. If the benzidin test is positive, I repeat with the more conservative guaiac test. If this is positive also, the patient is put on a meat-free diet for a few days. If there is still a marked reaction, the patient is bleeding somewhere. As with hematemesis, this finding is of importance only in conjunction with the history and other evidence in the case. No one thing is absolutely pathognomonic.

While accentuating the fact that many cases of carcinoma originate in the floor of an old ulcer, we must not lose sight of the fact that the most careful history may fail to show any hint of such an ulcer in many of our cancer cases. In fact, the most suspicious point may be that a man who has enjoyed a powerful digestion for fifty years or more suddenly shows signs of pyloric obstruction.

Dr. H. A. L. Ryfkogel: I would like to ask an explanation of the statement that has been made that gastroenterostomy is never of any use except in ulcer of the pylorus. I can illustrate my meaning best by citing a case and showing a specimen. I would like to disagree slightly with the statement that gastroenterostomy is valueless except when the ulcer is situated at the pylorus, because in many cases of ulcer near the cardia definite relief has followed this operation. It is true that probably in a

majority of cases such improvement is not seen, but in a certain type of cases in which the ulcer is surrounded by an inflammatory tumor mass and adhesions have formed in the lesser peritoneal sac or surrounding structures, and the patient's condition is such that he can stand no extensive operative procedure, a gastroenterostomy should be performed on account of the great possibility of its doing much good. This benefit may be in part due to the lessened acidity that sometimes, but not always, follows gastroenterostomy and in part may be due to an increased drainage that occurs in the new stoma. It is quite true that Cannon and Murphy have shown that in the normal stomach the peristaltic waves force the food past the new opening to the pylorus, but the stomach of which we speak is not normal and peristalsis is greatly interfered with by adhesions. The following case will illustrate the point that I have made: A man aged 32 had been treated for a month by the usual dietetic and medicinal treatment without benefit, and gradually grew worse. He was referred to me for operation and I found a saddle ulcer punched out and callous in type and densely adherent to the liver and posterior wall of the lesser peritoneal cavity. The patient's hemoglobin was 40, his general condition bad, and the anesthetist said it would be impossible to do any extensive operation. A gastroenterostomy was done. The patient was again put on an appropriate treatment for ulcer and he now made such rapid improvement that in a month it was easily possible to successfully remove the ulcer. At the end of the year the patient was still apparently well.

Dr. Herbert W. Allen: The question of the relief of gastric ulcer through medical and surgical treatment has been fought over very extensively for a number of years, and the fact that there is still so much difference of opinion would indicate that neither treatment is as yet ideal. There is no question that a large majority of ulcer patients can be relieved medically, not necessarily cured, but they can be relieved for long periods. There is also no question of the very brilliant results that surgical treatment shows, but as Dr. Alvarez has remarked, some of these surgical cases if followed for a sufficient length of time will have trouble; whether this is generally due to poor post-operative treatment or not I am not prepared to say. It appears to me that Dr. Kugeler has stated the matter conservatively. It is fair to give most ulcer cases at least one satisfactory medical treatment. The question of the patient's occupation has to be considered when treatment is to be decided upon. In the case of working men or women who are dependent on day labor it seems to me a saving of time to treat them surgically from the start. Well-to-do patients who can afford to give up the necessary time can be treated much more conservatively.

Dr. H. E. Castle: It would appear from what has been said this evening there is nothing to differentiate in the diagnosis of gastric ulcers other than ulcers of the duodenum. This is by no means true. Especially do we find the most perplexing conditions in perforated gastric or duodenal ulcers and ruptured appendices. These lesions often given symptoms identical with each other and also very similar to lesions of the gall bladder. One of my recent cases vividly illustrates the point at issue. I could not make the diagnosis and was rather firm in the belief the lesion was one of gall bladder origin. I called in one of our leading diagnosticians, whose judgment we all prize highly. After examining the case very thoroughly he confirmed my tentative diagnosis. At operation the incision was made according to Mayo-Robson over the gall bladder, and at once a perforated duodenal ulcer with a localized peritonitis was discovered. Incidentally, the treatment consisted of a purse-string suture around the ulcer; this was reinforced by a continuous suture and a Senn's omental graft placed over the line of suture. As the citratricial tissue had practically closed the pyloric orifice it was not necessary to do it by operation. A short-loop posteriogastrojejunostomy completed the operation.

While working in New York two years ago I was interested in the diagnostic skill of Eibhirn. He demonstrated before the Academy of Medicine one night a very unique contrivance consisting of a membranous stomach, which was inflatable. In collapsed condition it is introduced into the patient's stomach and then inflated, left there for a short time and then the air allowed to escape from the pseudo stomach; it is then removed and reinflated. The site that is over the ulcer will be stained with blood. For diagnosing duodenal ulcers the patient swallows a smooth metallic ball to which is attached a cotton string, the free end of the string is held by the hand of the physician. The ball travels into the duodenum where it is arrested by the string. On its withdrawal a blood stain will be discerned on the string at its point of contact with the ulcer.

Dr. H. B. A. Kugeler: I have not much to add to what I stated before. The question of medical and surgical treatment of ulcer of the stomach is dependent at the present time on the fact that we do not quite understand the pathology of the condition, but we do know that more can be done for the patient if he comes to surgical treatment sooner. Gastroenterostomy relieves and makes the patient comfortable. If these cases were followed carefully for longer time we would find that more have developed carcinoma than we know at the present time. The only way to do is to keep calling attention to this condition, just as I have done this evening, so as to keep it fresh in the mind of every one.

REPORT OF A CASE OF POLYCYTHEMIA.*

By WILLIAM C. VOORSANGER, M. D., San Francisco

Polycythemia was first described in 1892 by Rendu and Widal with two salient features.

1. Chronic cyanosis due to polycythemia.
2. Splenic enlargement.

These authors attributed this symptom complex to a splenic tuberculosis. Vaquez in 1899, Turk in 1902 and Osler in 1903 called general attention to the above syndrome, demonstrating that it was not due to splenic tuberculosis but to a primary hyperplasia of the erythroblastic bone marrow.

Patients with this condition usually seek medical advice for abnormal color and condition of skin and mucous membrane, for symptoms of cerebral congestion such as headache and vertigo, and for weakness.

The spleen is enlarged in 85% of all cases. In about one-half of the cases reported (about fifty) red blood cells range 10 M.—13 M., averaging 8 M. Hemoglobin 120 to 200%—leukocytes usually increased. Polynuclear neutrophiles range from 75 to 92% with proportionate decrease in per cent. of lymphocytes.

Miss L. S., age 19 years, entered Mt. Zion Hospital, October 9, 1911, with a complaint of pain in cardiac region for past two years, cyanosis for about one year and weakness for the past six months.

Family history showed mother living, age 58; father, age 69; two sisters alive and well—negative to circulatory or respiratory disease.

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* Read before the Combined meeting of the Surgical and Medical Sections of the San Francisco County Medical Society, Nov. 7, 1911.

Her childhood was free from all diseases except measles, pertussis and chicken-pox, but she states that she was never robust. Her menses began at 15 years, being regular every four weeks, five days duration and no pains. Her previous history shows that as a child she was subject to nose bleed, but aside from this has had no disease which could have a bearing upon the present illness, which she states began about two years ago when she noticed that upon exertion she would have pain in the cardiac region. She also noticed difficulty in breathing, which has gradually become worse. At this time she also noticed attacks of vertigo. The symptoms progressing, she ceased her work as stenographer one year ago and for the first time she noticed the blueness of her lips and finger tips, the weakness following upon this, she consulted a physician.

Appetite fair, bowels more or less constipated.

Status: Well-nourished girl, cyanosis of skin, lips and mucous membrane marked. No disturbance in course of cerebral nerves, no glandular enlargements.

Lungs negative.

Heart borders upper, third rib. Right, slightly beyond mid sternum. Left, nipple line.

Apex fifth inter-space mammary line. Tones, pure.

Abdomen soft, liver and spleen not enalrged.

Reflexes. Patella and plantar exaggerated.

Pressure along course of intercostal nerve fifth space painful.

Examination of backgrounds of eyes negative.

Urine examination, color amber, specific gravity 1015, acid, no albumen, no sugar, no blood.

Blood examination—(Several were made, the last only is quoted).

R. B. C.	7,920,000
W. B. C.	8,400
Haemoglobin	140%
Coagulability	3½ min.
Polymorphin. Neutrophiles	71%
Lymphocytes	23%
Large mononuclears	6%
Eosinophiles	0

Examination of feces—negative.

Examination of sputum—negative.

Van Pirquet reaction negative (congestion of both marks was quite intense, due to patient's general condition).

X-Ray examination. Two pictures, one front view, one taken diagonally through chest, shows heart considerably enlarged, particularly to the right.

The diagnosis of the case is unquestionably polycythemia with enlarged heart, the latter due to the former rather than vice versa. Cardiac and pulmonary disease had to be excluded in this case, also local pressure, the latter being done by taking blood from the ear and from the toe. Mediastinal disease was excluded by X-Ray examination.

The prognosis is bad as recovery has never been reported in a case of polycythemia, the average course of the disease being six to eight years.

Treatment is expectant, bleeding having been tried but with little success.

Discussion.

Dr. Milton Abrahamson: I feel fortunate in having seen this case with Dr. Voorsanger, as true polycythemia is not only very rare but extremely interesting from the standpoint of differential diagnosis. The differential diagnosis between true polycythemia (erythrocytosis megalosplenica) and local polycythemia is sometimes very difficult. The clinical findings of a case of local polycythemia which I saw in my service at the German Hospital will serve to illustrate this point. A man of thirty came to the hospital complaining of shortness of breath and an intense cyanosis in the upper half of the trunk. A glimpse at the man suggested the diagnosis of true polycythemia and a thorough physical examination failed to disclose any cause which would explain his condition. The blood examination taken from the ear showed a red count of 10,000,000; blood taken from the toe showed only 5,000,000. The blood findings made us anxious to carry our investigations a little further. X-Rays were taken of the chest, which showed a mediastinal tumor, which proved at autopsy to be a sarcoma pressing on the vena cava. It was from the standpoint of differential diagnosis that the case under discussion interested me most, and in order not to overlook any local condition in the chest, X-Ray pictures were taken both austero-posteriorly and laterally. Furthermore, blood counts were made from the ear, the finger and the toe. The ear gave on November 5th, 1911, 7,000,000; the finger 10,000,000, and the toe 6,000,000, while the hemoglobin ranged between 120-140. Many blood counts were made on different days, but they did not show much variation from the ones I have just quoted. In looking over the literature it was interesting to come across a case reported by Brill as having been cured by appendectomy. This patient had more or less appendiceal symptoms in addition to a well marked polycythemia. This patient was operated on and a week later the blood findings were perfectly normal. As there was no further report given of the case I should be inclined to consider the apparent cure more as one of the remissions which are part of the disease, in view of the fact that these remissions have been known to last as long as eight months.

Dr. Henry J. Kreutzmann: I would like to ask Dr. Voorsanger if there were examinations of blood made during the menstrual period.

Dr. H. D'Arcy Power: I would like to ask a few questions. It is to be remembered that the most interesting thing about polycythemia is its pathogenesis. Is it due to over-production of red cells or non-removal of the used-up erythrocytes? Is the cyanosis the result of mechanical obstruction of the pulmonary capillaries or the result of modification in the chemistry of the hemoglobin? Therefore, I would like to ask whether the specific gravity of the plasma has been noted in the coagulation time and whether any spectroscopic examination of the hemoglobin carried out. We must do more than make blood counts if the nature of the disease is to be solved.

Dr. W. C. Voorsanger: Answering Dr. Kreutzmann, as far as I know this young lady has never had any particular trouble during her menses; I do not remember making any blood counts at this period because pain was never complained of. The intense congestion in this case was demonstrated by a Van Pirquet reaction which, though negative, caused a considerable area of redness around both marks. Answering Dr. Power, I will say that the coagulability time of the blood was three and one-half minutes. Neither the specific gravity of the blood nor a spectroscopic examination was made. As far as the pathogenesis of the condition is concerned, little is known, as but three autopsies are recorded.

EXTRAORDINARY TEMPERATURES.*

By MILTON B. LENNON, M. D., San Francisco.

Temperatures above 112° F. may well be called extraordinary, and the rarity with which they are met is sufficient reason for my reporting the following case.

On Sept. 29th I saw, with Dr. Thos. E. Shumate, a young married lady who had a steadily rising temperature since the preceding Monday. Since no pathological changes could be ascertained on physical examination, except a slight systolic murmur at the base of the heart, the surmise of hysteria seemed a logical conclusion. The doctor informed me that he had curetted the patient on Sept. 10th because of bleeding following a miscarriage. The abortive outcome of her pregnancy was a source of chagrin and disappointment to the patient and she took it deeply to heart. All went well until the Monday before I saw her, when noticing a slight tinge of blood on the bed sheets, she became greatly agitated, restless and sleepless, and from that time until the end of the week refused all food save asparagus tips for which she evinced a marked predilection. My examination of the patient agreed with that of Dr. Shumate. I was loath to conclude that hysteria alone was present; however, that the patient was hysterical was plain from her demeanor, her childish, petulant talk, her having a doll on her arm, and perhaps her unconcern about her temperature, which normally she would have appreciated since she had been a nurse. Her skin was cool and I doubted the thermometer; her pulse was but 80. A rectal temperature was taken and it measured 105° F. I suggested quiet and warm baths. The first bath resulted in her pulse advancing to 130 and great alarm on the part of the nurse. Steadily rising, the temperature reached 107° F. by 8 o'clock in the evening and at midnight measured 109° F. The next morning further consultation was had. Dr. William Watt Kerr examined the patient and found her heart in a better condition than it had been in March last. Neither Dr. John Gallwey nor Dr. John Graves nor Dr. Alden could find any further physical change to account for the temperature. I was asked to take the patient in charge. I had no great expectations from any antipyretic measure. The patient was brought to the St. Francis Hospital, a new nurse gotten and solitude as far as possible ordered. Since the skin was cool despite the high registrations of the thermometer, an electric pad was put on the abdomen and ice irrigations given. The temperature advanced to 111° F. An ice bath given in the afternoon resulted, or better said, was followed by a drop of 2° F. In the evening a sedative and a second ice bath were given and in the course of fifty minutes there was a drop of 13° F. without the least sign of shock. During the night the patient rested well, but at 6 a. m. the following morning 110° F. were recorded and by 9 o'clock another degree had been added. With the remembrance of what had followed the night before, a second sedative and bath were given and the nurses complained of the frigidity of the water; twenty minutes later 114° F. were recorded. During the greater part of the day the temperature was above 112° F.; during the night it dropped a little, but on Monday, October 2d, it was again at 112° F.

The patient was moved to another room, one cooler, quieter and more commodious than the one she had been in. She thought she had been brought from the operating room where the currettment had been done three weeks before, and had lost all memory of the intervening time. When I called at noon she failed to recognize me, and wondered who I was. She talked clearly, was hungry, but still registered 107° F. By 5 o'clock her temperature was normal. Except at the time of the warm bath her pulse never advanced above 90 beats per minute. Needless to say we all doubted the registrations of the thermometer, but many were used by many persons. Measurements were taken in the axilla, rectum and mouth, singly and simultaneously, and coincided. We regretted that the temperature of the urine had not been taken. This omission was compensated for shortly after the patient went home, when her temperature went skyward again and this time to 115° F. When her temperature by rectum was 105.4° F., the urine was 106° F., and when the rectal measurement was 115° the urine was the same. The patient is now well.

This perplexing case teaches at least three lessons. Firstly, patients without toxemia may tolerate great temperature. Secondly, the pulse rate is not dependent upon the temperature. Thirdly, hysterical temperatures are not influenced by the usual hydrotherapeutic measures which are so efficient in toxic fevers.

Discussion.

Dr. Clarence Quinan: Through the courtesy of Dr. A. A. O'Neill, ship surgeon on the transport Peru, I had an opportunity in 1908, whilst en route to Manila with the second military expedition, to study a remarkable case of terminal hyperpyrexia. The patient was a member of the crew, a stoker, I believe, and he was obviously in a dying condition. His temperature, taken with a certified Hicks thermometer, a few minutes before he expired, was 110¾°. At autopsy we found a remarkable state of affairs. It was a typical case of von Recklinghausen's disease. The body was covered with a multitude of neurofibromata of every size. Upon removing the skull cap an extensive leptomeningitis was discovered. It was evident that the infecting organism had gained access to the brain coverings by the mastoid route, for the inner table in that area was covered with exostoses. This seems a favorable opportunity to put on record a case of high temperature, although, obviously, in this case the disturbance was entirely unlike that reported by Dr. Lennon.

* Read before Combined Meeting of Medical and Surgical Sections of the San Francisco County Medical Society, November 7, 1911.

ANALYSIS OF TREATMENT OF SIXTY-TWO CASES OF SYPHILIS WITH SALVARSAN.*

By LOUIS GROSS, M. D., and WALTER S. JOHNSON, M. D., San Francisco.

When salvarsan was ushered into syphilitic therapeutics, it was heralded as a great cure-all, assuming a responsibility no other drug ever had to contend with. The fact that it has withstood for almost a year all onslaughts, proclaims it as a wonderful preparation.

In this series of sixty-two cases we have aimed to place our material before you in a clear and concise manner. We have controlled our cases with Wassermann tests and in over half of the cases with Noguchi also.

Unless our cases presented an absolutely clear picture of lues we have had our tests made previous to the administration of an injection. We regret the disappearance of some of our cases after injection, yet these are disadvantages with which all physicians have to contend.

You will see by the tabulation that salvarsan was given 117 times, 108 of which were by the intravenous route, and 9 by the intramuscular method.

0.6 was given 102 times.
0.5 was given 9 times.
0.4 was given 5 times.
0.02 was given 1 time.

Of the 62 cases, 51 were males and 11 females.

TABLE NO. 1.

The 117 injections were given as follows:

Injections per case.	Males.	Females.	Total No. patients.	Total No. injections.
1	23	8	31	31
2	13	1	14	28
3	11	2	13	39
4	3	0	3	12
7	1	0	1	7
	52	11	62	117

The following shows age of patients:

1	4½			mos.
1	15	to	20	yrs.
12	20	to	25	yrs.
13	25	to	30	yrs.
15	30	to	35	yrs.
9	35	to	40	yrs.
9	40	to	45	yrs.
1	45	to	50	yrs.
1	over		50	yrs.

The age of the syphilis follows:

1880	1 case	1906	7 cases
1895	1 case	1907	3 cases
1899	3 cases	1908	6 cases
1901	2 cases	1909	5 cases
1903	2 cases	1910	8 cases
1904	2 cases	1911	7 cases
1905	1 case	Unknown	12 cases

The diagnosis was made by

Spirochetae examination in	1 case
Symptoms in	26 cases
Wassermann and Noguchi in	35 cases
Total	62 cases

*Read at the San Francisco County Medical Society, Dec. 5, 1911.

Of the 62 cases—

17 cases or 27% had no treatment.
16 cases or 26% had poor treatment.
10 cases or 16% had fair treatment.
8 cases or 11% had good treatment.
11 cases or 18% had excellent treatment.

Results of treatment:

Of the 62 cases—

23 became negative, of which one case relapsed.
2 changed from x x x to x.
4 changed from x x x to x x.
14 disappeared, 3 of which were improved.
16 improved, that is symptomatically, 4 of which relapsed.
3 no improvement.

If we deduct the 11 cases from the 14 cases that disappeared (3 having shown improvement) that leaves 51 cases accounted for.

Of the 51—

8 or 16% either relapsed or showed no improvement.
43 or 84% showed improvement.

We will now analyze the 23 cases that became negative.

Of these 23 cases—

10 became negative after 1 injection.
7 became negative after 2 injections.
4 became negative after 3 injections.
1 became negative after 4 injections.
1 became negative after 6 injections.

To understand this table we will take the case negative after the 6th injection. This patient was in the secondary stage of lues and he had previously good mercurial treatment. The one patient who became negative after the 4th injection: this patient had only previously fair mercurial treatment and was in tertiary stage. Good and excellent mercurial treatment previous to our salvarsan treatment bears some relation to a rapid recovery, as 4 patients who received previously good treatment became negative after 2 injections, whereas 2 patients, one in the latent stage, the other in the secondary stage, became negative after 1 injection.

By-Effects.—There was only one alarming complication of any importance, which was Case No. 38. This patient was the mother of syphilitic infant, No. 31. She had, as shown by tabulation, a severe arsenical intoxication, severe diarrhea, albuminuria, anuria, jaundice, fever and collapse. She lost 25 pounds in weight. It developed six days after the "606" and continued for 4 weeks; recovered. Although patient was a vigorous woman, she should have had 0.5 instead of 0.6.

Case No. 13 reacted severely at time of injection. It was a very malignant case reacting badly to mercury. He had severe lesions of eye and throat, although he had been very conscientious in his mercurial treatment. Was very much improved by the one injection, but disappeared.

Case No. 10 had phlebitis after first and third injection, the first was slight; the third quite severe. At present writing (10 days since injection) arm is much improved.

TABLE NO. 2.

This tabulation shows character of previous mercurial treatment:

Stage of Disease.	Sex.		None.		Poor.		Fair.		Good.		Excellent.	
	M.	F.	No. of Cases.	Per Cent.	No. of Cases.	Per Cent.	No. of Cases.	Per Cent.	No. of Cases.	Per Cent.	No. of Cases.	Per Cent.
Primary 4	4	0	4	100	0	0	0	0	0	0	0	0
Secondary 23	18	5	7	30	3	13	1	5	5	22	7	30
Tertiary 25	21	4	3	12	10	40	7	28	3	12	2	8
Latent 9	7	2	3	33	3	33	1	11	0	0	2	22
Hereditary 1	1	0	0	0	0	0	1	100	0	0	0	0
62	51	11	17	27	16	26	10	16	8	11	11	18

TABLE NO. 3.

The relation of the stage of lues, the number of injections to effect a negative reaction, and the character of the previous mercurial treatment:

	None.	Poor.	Fair.	Good.	Ex.	No. of Inject.
Negative after 1 injection.....	L. L. 1.	3. 3. 3.	2. 3.		L. 2.	10
Negative after 2 injections.....	L.	L.	3.	3. 2. 2. 2.		7
Negative after 3 injections.....	2.	3.	2.	2.		4
Negative after 4 injections.....			3.			1
Negative after 6 injections.....				2.		1
Total.....	5	5	5	6	2	23

No.	Sex.	Age.	Occupation.	Stage.	Date of Chancre.	Previous Treatment.	Symptoms.	Salvarsan Injections. V—Intravenous. M—Intramuscular. Date.	Amt.	Method.	Wassermann and Noguchi. BI—Before injection. A 1—After 1st injection. Date.	N.	W.	Results.	Remarks.
1	M	34	Waiter	3rd	1904	Hg. internally and inunctions and KI for one year.	Perforation of nasal septum.	Jan. 24 Apr. 15 Oct. 1	0.6 0.6 0.6	M V V	Apr. 1 Sep. 1 Nov. 24	xxx xxx ---	xxx xxx ---	A 1 A 2 A 3	Much improved. In perfect health. Weight much increased.
2	M	24	Musician	Latent	1906	Took 65 injections.	Sexual vigor declining.	Feb. 6 Apr. 10 Apr. 28 Sep. 20	0.6 0.6 0.6 0.6	M V V V	Jan. 27 Mar. 9 Sep. 13	xxx xxx x	xxx xxx x	BI A 1 A 3	Sexual vigor and general condition much improved.
3	M	24	Druggist	Latent	Dec., '07	Hg. internally for two years.	None apparent.	Feb. 10	0.6	M	Feb. 10	xxx	xxx	BI	Disappeared.
4	M	38	Machinist	3rd	Jan., '02	Hg. internally for first 1½ yrs. Rest for 5 yrs.; then Hg. and iodide to date.	None present. Luetic orchitis in May, '09.	Feb. 14 Apr. 3 May 11	0.6 0.6 0.6	V V V	Feb. 10 Mar. 30 May 4 Jun. 8	xxx xxx xxx xxx	xxx xxx xxx xxx	BI A 1 A 2 A 3	No improvement. Refused further treatment.
5	M	26	Electr'n	2nd	Apr., '09	No treat. first 5 mos.; Hg. injections and internally to date.	Lesions of mucous membrane and skin would disappear under Hg. to reappear.	Jan. 10 Feb. 21 May 11 Jul. 24 Aug. 3 Aug. 29 Sep. 9	0.6 0.6 0.6 0.6 0.6 0.6 0.6	M V V V V V V	Feb. 20 Jul. 24 Sep. 9	xxx xxx ---	xxx xxx ---	A 1 A 3 A 6	No return of lesions since 2nd injection; general condition much improved; increase in weight.
6	M	30	Merchant	Latent	1904	No treat. at all as was treated for chancroid; was undoubtedly a double infection; received 25 soluble inject. and KI in Dec., 1910.	None except symptoms of dizziness.	Feb. 27 Apr. 15 Sep. 22 Nov. 16	0.6 0.6 0.6 0.6	V V V V	12-16-10 Feb. 17 Apr. 6 May 25 Aug. 17 Nov. 9	xxx x xxx xxx xxx x	xxx -- xxx --- x x	.... A 1 A 2 later A 3	Before Hg. injections. After Hg. injections. Felt well after 2nd injection; dizziness disappeared; increase in weight.
7	M	43	Bookmaker	Latent	1903	Hg. internally for first 6 mos. Three yrs. at Ark. Hot Springs. No treat. last 4½ yrs.	None.	Mar. 7	0.6	V	Mar. 4 Apr. '13 Nov. 16	xx --- ---	xx --- ---	BI A 1 later	Negative.
8	M	44	Barber	1st	Feb. 28, '11	None.	Chancre.	Mar. 8	0.6	V	Mar. 8 May 2	--- ---	--- ---	too early A 1	Negative; diagnosis made on the character of the chancre.
9	M	36	Musician	1st	Apr., '08	None.	Chancre.	Mar. 13	0.5	V	Mar. 9	---	x--	too early	No Spirochetae Pallida found. Lesion disappeared in 2 weeks. Habitue of Morph., min. dose 12 gr. per diem.
10	M	27	Merchant	Latent	1901	Hg. internally in very early stage. Received 25 sol. injections in Dec.	None apparent.	Mar. 16 May 29 Nov. 21	0.6 0.6 0.6	V V V	Dec. 10 Feb. 24 Apr. 27 Jul. 19 Nov. 9	xxx x xx --- xx	xxx x x --- xx	.... A 1 A 2	Before Hg. injections. After Hg. injections. Negative and then relapsed.

No.	Sex	Age	Occupation	Stage	Date of Chancre	Previous Treatment	Symptoms	Salvarsan Injections. V—Intravenous. M—Intramuscular. Date.	Amt.	Method	Wassermann and Noguchi. BI—Before injection. A 1—After 1st injection. Date. N. W.	Results	Remarks
11	M	21	Clerk	3rd	Apr., '08	Hg. internally and KI for 3 mos.	Eruption.	Mar. 16	0.6	V		Disappeared.	
12	F	19	Housewife, wife of No. 11	3rd	Nov., '08	Hg. internally.	Slight eruption.	Mar. 16	0.5	V		Disappeared.	
13	M	30	Glass-worker	2nd	Oct., '09	Hg. and arsenical injections.	Mouth and skin lesions still present iritis; deep lesion of pharynx.	Mar. 18	0.6	V		Disappeared.	
14	M	40	Chinese merchant	2nd early	Jan., '11	Treated by Chinese doctor.	Syphilitic laryngitis; papulo-squamous eruption over chest, feet and hands; mucous patch on tonsil.	Mar 25	0.6	V		Eruption disappeared in about 2 weeks; Laryngitis improved. Disappeared.	
15	F	26	Housewife	Latent	Unknown	None.	Secondary anemia. Husband confesses to lues.	Apr. 7	0.6	V	Apr. 1 xxx xxx BI May 25 --- --- A 1	Patient feels well.	
16	M	33	Laborer	2nd malig.	Apr., '09	Hg. internally since infection.	Nocturnal headaches; 6 gumnata, 2 on left forearm, 4 on left leg, which began in Nov., '10.	Apr. 4 May 2 Jul. 19	0.6 0.6 0.6	V V V	Apr. 4 xxx xxx BI Jul. 7 --x --- A 2 Nov. 18 --- --- A 3	Lesions all healed; general condition much improved. Weight increased 19 lbs. Negative.	
17	M	41	Barber	3rd	1903	Hg. internally 1st year; then indifferent as to treat.; soluble injections last 8 or 9 mos. Hot Springs in Feb.	Nocturnal and diurnal headaches began 8 mos. ago, resisting all treat.—2 perforations of palate, red swollen area right nostril.	Feb. 19 Apr. 5 Jul. 10	0.6 0.6 0.6	M V V	Apr. 5 xxx xxx A 1 Jul. 5 xx xx A 2	Headaches disappeared immediately after 1st injection, remission of three weeks (Feb. 19 to Mar. 12), then became severe again; disappeared after 2nd injection. Have not reappeared. Gain in weight 16 lbs. Small perforation almost closed.	
18	M	28	Prop. Livery Stable	3rd	1905	Inunctions first month; few injections on and off during 1910.	Gumma of testicle 1½ yrs. ago.	Apr. 4 Nov. 5	0.6 0.6	V V	Mar. 30 xxx xxx BI Aug. 10 xx xx A 1	Still under treatment.	
19	M	32	Waiter	2nd	Jan., '10	Hg. internally and injections and KI for 2 years.	Mucous patches and syphilides.	Apr. 12 Jul. 8	0.6 0.6	V V	Apr. 3 xxx xxx BI Jun. 1 xx x A 1 Aug. 15 --- --- A 2	Negative. Much improved.	
20	M	41	Salesman	3rd	Unknown	Injections and internally for 4 yrs.	Large gumma of rectum and loss of sexual power.	Apr. 15	0.6	V	Mar. 23 xxx xxx BI	Mass in rectum disappeared in one week. Sexual power restored.	
21	M	34	Commission Business	2nd	Aug., '10	Hg. inunctions and internally since infection.	Squamous papules over face and body.	Apr. 29	0.6	V		Eruption disappeared to reappear in Sept.	
22	F	27	Waitress, wife of No. 21	2nd	Aug., '10	Hg. inunctions and internally since infection.	Nocturnal headaches; squamous papules over body; menorrhagia.	Apr. 29	0.6	V		Eruption, headache and menorrhagia disappeared. Rash reappeared slightly.	
23	M	33	Letter Carrier	3rd	1902	Hg. internally 1st 8 mos., then discontinued until Jan. '07; injections until Sept., '07; rest until Oct., '08, then took few injections.	Old scars from previous pustular syphilides; malaise.	May 13 Jun. 10 Aug. 12 Oct. 3	0.6 0.6 0.6 0.6	V V V V	Aug. 3 xxx xxx A 2 Nov. 3 -- -- A 4	Much improved; 12 lbs increased in weight.	
24	M	74	Longshoreman	3rd	1880	Hg. internally 1st 3 mos.	Ulcers of legs.	May 10	0.6	V	May 6 xxx xxx BI Sep. 9 --- --- A 1	Leg ulcer well. Negative.	
25	M	32	Waiter	3rd	Jun., '06	Hg. internally and inunctions 2 yrs.	General anemia. Malaise.	May 15 May 30	0.6 0.6	V V	May 11 xxx xxx BI Jun. 10 --- --- A 2	General condition improved. Increase of 16 lbs in weight. Negative.	
26	M	36	Waiter	Latent	Jul., '06	Injections continuously.	None apparent.	May 17 Jun. 14 Oct. 13	0.6 0.6 0.6	V V V	Jan. 12 xxx xxx BI Jul. 15 xxx xxx A 2 Nov. 9 xx A 3		
27	M	27	Lumberman	2nd	Jul., '10	Hg. internally and inunctions.	Mucous patches; enlarged glands; laryngitis; condyloma.	Apr. 26	0.6	V	Apr. 24 xxx BI		
28	M	28	Butcher	3rd	Jun., '06	Hg. injections.	Ulcer on tongue.	May 22 Nov. 12	0.6 0.6	V V	May 18 xxx BI	Ulcers on tongue disappeared. Reappeared Nov. 1st.	
29	M	35	M't s agt.	2nd	Feb., '10	Hg. injections from Aug., '10, to Feb., 11.	Mouth—mucous patches only.	May 19	0.6	V		Refuses further treatment as feels so well.	
30	M	31	Butcher	3rd	1906	Hg. internally.	Ulcer on tongue; enlarged glands.	May 22	0.6	V			
31	M	11 mos	Child of No. 38	Hereditary	?	Inunctions and KI.	Child moribund; weight at birth 6¾ lbs. On day of injection 4½ lbs.	May 29	.02	M		Taken from breast at time of mother's intoxication. Has pemphigus since injection, but has disappeared. Much improved. Weight is 16 lbs. Refuse further treatment.	
32	M	26	Marine Eng.	2nd	Oct., '08	Hg. internally.—Soluble injections.	None.	Jun. 2 Jun. 8	0.6 0.6	V V	May 3 xxx x BI	Will take further treatment.	

No.	Sex	Age	Occupation	Stage	Date of Chancre.	Previous Treatment.	Symptoms.	Salvarsan injections. V—Intravenous. M—Intramuscular. Date.	Amt.	Method.	Wassermann and Noguchi. BI—Before injection. A 1—After 1st injection. Date. N. W.	Results.	Remarks.
33	M	27	Laborer	2nd	Unknown	None.	Condyloma of rectum and scrotum. Macular syphilides.	Jun. 5	0.6	V			Disappeared.
34	F	31	Housewife, wife of No. 33	2nd	Jan. 11, '11	None.	Condyloma of rectum and vagina. Pregnant 3 mos.	Jun. 5	0.4	V			Disappeared
35	M	40	Foreman of construct. work	3rd	1895	Protoiodide 1895 to 1898. No treat. since.	Arthritis — Pains shooting along thighs.	Jun. 12 Jun. 21 Aug. 21	0.6 0.6 0.6	V V V	Jun. 9 xxx xxx BI Jul. 29 xx --- A 2		Pains have disappeared entirely.
36	M	21	Civil Engineer	2nd	Apr., '11	None.	Chancre—Eruption Adenopathy.	May 31 Jun. 6 Jul. 10	0.6 0.6 0.6	V V V	Apr. 4 xxx xxx BI Jul. 7 xxx x A 2 Oct. 7 --- --- A 3		Disappearance of all symptoms.
37	M	31	Prop. of Cafe	3rd	1901	Hg. internally but with no regularity.	Lesions on back, thigh, penis. Sensitive nodule over trapezius.	Jun. 13 Jun. 20	0.6 0.6	V V	Jun. 8 xxx xx BI Aug. 17 xxx xx A 2		Disappearance of all lesions. Increase of 7 lbs. in weight. Feared further treatment.
38	F	24	Housewife	2nd	?	None.	None. Husband gave luetic history. Mother of No. 31.	Jun. 20	0.6	V			Arsenical poisoning. Collapse; severe diarrhea; albuminuria; anuria; jaundice; fever; loss of 25 lbs. Developed 6 days after injection, and disappeared in four weeks. Well but refuses further treatment.
39	M	27	Clerk	2nd early	May 23, '11	None.	Chancre—Secondaries appeared Jun. 19, 1911.	Jun. 28	0.6	V	May 24 — 2 specimens dark field condenser and 2 smears with Giemsa stain neg. Aug. 3 xx x A 1		Induration in chancre and secondaries disappeared within one week. Refused further treatment.
40	F	25	Housewife, wife of No. 29	2nd	Unknown	None.	Macular eruption.	Jun. 30	0.5	V	Jun. 20 xxx --- BI		Feels so well refuses further treatment.
41	M	40	Plumber	3rd	Aug., '06	90 intramuscular injections. Internal medication.	Pustular syphilides.	Jul. 6	0.6	V	Jul. 1 xxx BI Sep. 10 --- A 1		Disappearance of all symptoms.
42	F	24	Housewife	Latent	Unknown	None.	Severe secondary anemia. Progressive loss of weight.	Jul. 10 Aug. 15	0.6 0.6	V V	Jul. 1 xxx xxx BI Aug. 4 xxx A 1		No results.
43	M	38	Bookbinder	3rd	Apr., '07	Intramuscular injections for 4 mos.	Pains in shoulder; worse at night.	Jul. 14	0.6	V	Jul. 10 xxx BI Aug. 1 --- A 1		Bone pains relieved.
44	M	21	Bartender	2nd	Dec. 10, '10	None.	Mucous patches in mouth; alopecia macular eruption.	Feb. 16 Jul. 17 Jul. 24	0.6 0.6 0.6	M V V	Feb. 15 xxx BI Jul. 13 xxx A 1		Still shows some mucous patches.
45	M	37	Laborer	3rd	Unknown	Injections and internal.	Ulcers both legs. Pustular eruption over body.	Jul. 17 Jul. 24	0.6 0.6	V V			Ulcers disappeared entirely; patient disappeared. Nov. 15 ulcers returned.
46	M	42	Clerk	3rd	1899	Injections, internal, inunctions.	Retinitis.	Jul. 19 Jul. 26	0.6 0.4	V V	Jul. 3 xxx BI Nov. 9 --- A 2		Right eye very good; slight improvement in left.
47	M	31	Drummer	3rd	1906	No general treat.	Preataxic symptoms. Optic neuritis.	Apr. 5 Jul. 24 Jul. 31	0.5 0.4 0.4	M V V	Apr. 4 xxx BI Jul. 18 xxx A 1		Much improved; vision improved; gait better.
48	M	29	Veterinary Surgeon	2nd	Apr., '09	Inunctions, internal.	Mucous patches.	Jul. 24 Aug. 1	0.6 0.6	V V	Jul. 15 xxx BI Sep. 30 --- A 2		All symptoms disappeared.
49	F	23	Housewife, Japanese	3rd	Unknown	None.	Epitrochlear glands size of hen's egg; cervical enlarged.	Jul. 26	0.5	V			Results excellent. Patient disappeared.
50	M	32	Clerk	3rd	Mar., '07	Injections and internal for 1 yr.	Severe pains in legs; profuse sweats.	Aug. 2	0.6	V	Jul. 29 xxx xxx BI Aug. 20 --- A 1		Negative. Relieved of all pains in legs.
51	F	35	Housewife	3rd	Unknown	None.	Syphilitic arthritis and headaches.	Aug. 4	0.4	V	Aug. 3 xx xx BI		Results unknown, patient disappeared.
52	F	29	Housewife	2nd	Unknown	Injections for one year.	Syphilides on arms and legs.	Aug. 4 Aug. 15 Oct. 19	0.6 0.6 0.6	V V V	Aug. 1 xxx x BI Nov. 20 --- A 3		Much improved.
53	M	23	Clerk	2nd	Jun. 8, '10	Injections for one year.	None apparent.	Aug. 6	0.6	V	Aug. 5 xx xxx BI Oct. 7 --- A 1		Negative. Patient is well.
54	M	24	Electr'n	2nd	1908	Internal—Springs.	Laryngitis; mucous patches; macular eruption; alopecia; ulcer glans penis; condyloma scrotum.	Aug. 8 Aug. 15	0.6 0.6	V V			Skin cleared in 10 days Rectum well in 10 days.
55	M	43	Laborer	Latent	Unknown	None, as was never aware of any lues.	Obscure pains in groin.	Aug. 9 Aug. 15	0.6 0.6	V V	Aug. 8 xxx xxx BI Sep. 23 --- A 2 Sep. 28 --- --- A 2		Not any improvement.
56	M	24	Bank clerk	3rd	1908	Hg. internally for 3 yrs. Inunctions.	Syphilitic orchitis and epididymitis.	Aug. 12 Sep. 16 Nov. 5	0.6 0.6 0.6	V V V	Aug. 3 xxx xxx BI Nov. 4 xxx xxx A 2		Still under observation; testicle and epididymis normal. weight increased.
57	M	34	Welgher	3rd	1899	Hg. internally for 1 yr.	Loss of patellar reflex; loss of sexual power; bladder paralysis.	Aug. 16 Aug. 24	0.6 0.6	V V	Jul. 15 xxx BI Sep. 15 --- A 2		Recovery of bladder paralysis; sexual power returned.

No.	Sex.	Age.	Occupation.	Stage.	Date of Chancre.	Previous Treatment.	Symptoms.	Salvarsan Injections. V—Intravenous. M—Intramuscular. Date.	Amt.	Method.	Wassermann and Noguchi. BI—Before injection. A 1—After 1st injection. Date. N. W.	Results.	Remarks.
58	F	33	Secretary	3rd	1899	Hg. internally for 2 yrs.	Enlarged liver; obscure pains in liver and stomach.	Sep. 17 Sep. 23 Nov. 5	0.5 0.5 0.5	V V V	Aug. 3 xxx BI Nov. 2 xxx xxx A 2		Condition much improved; pains entirely well. Still under treatment.
59	M	37	Teamster	1st	Sep. 3, '11	None.	Chancre.	Sep. 18 Sep. 25	0.6 0.6	V V			Cleared in 10 days.
60	M	50	Bridge-builder	2nd	Aug. 6, '10	Hg. internally; KI inunctions; large number of proprietaries.	Squameus eruption; glands enlarged; old iritis and cyclitis.	Oct. 3	0.6	V			Still under observation.
61	M	32	Merchant	2nd	Mar. 17, '09	Soluble injections.	Mucous patches.	Jan. 12	0.5	M	7-10-09 xxx ..... 12-16-10 x --- BI 2-17-11 --- --- A 1 7-17-11 --- --- later		Before Hg. injections. No return of any symptoms.
62	M	27	Salesman	1st	Jul. 29, '11	None.	Chancre.	Aug. 5	0.6	V	Aug. 3—Full of typical spirochet pallida. Sep. 13 --- --- A 1 Oct. 27 --- --- later		Chancre disappeared in 72 hours.

The highest temperature was about 102°, there have been chills, numerous spells of vomiting (as many as 10 times in some cases), sweating, diarrhea, but no cases of collapse, except in case noted above. We have had no sloughs. One French writer claimed that by the use of distilled water in mixing your salvarsan there would be no vomiting, others claim by not eating before injection the same would result, but we have not found this to be the case.

All intravenous cases were kept in bed from 8 to 24 hours, the majority, however, left the hospital in 12 hours.

Relapses. So far only case No. 10 has relapsed. It may be that there will be a larger number of relapses; time alone can tell. After a negative reaction, it is difficult to get your patients to take another test to still further confirm your negative. At present we have had four cases besides case No. 10 (Nos. 16, 43, 61 and 62), take another test after a negative reaction.

Wassermann and Noguchi Reaction. In all of my personal (Gross) cases, I have always had both tests made as I find the Noguchi the finer of the two. If we take case No. 6 as an instance, we will find that on May 25th, according to our Wassermann reaction it was negative, according to most men a cure temporary or permanent. According to our Noguchi, the patient was not cured. He was advised to take another salvarisan injection, but hesitated; later he decided to get another test made, which was done on August 17th, when you note the change to Wassermann x.

Before closing I wish to emphasize the fact that all of these cases have had no mercury after their salvarsan injection, in order to assist in establishing the utility of this new drug, salvarsan only has been used. Should there be any recurrences, we expect whenever possible to give another injection of "606." Time only can tell whether relapses will occur in our negative cases. We think that if there are no relapses either in our serum tests or symptomatically for a period of one year, the patient should be considered cured of his leutic infection. From the analysis of both Wassermann and Noguchi tests, after administration of salvarsan, we are entitled to draw the following conclusions:

1. One injection does not cure all cases. It may take from one to six treatments.
2. The negative reaction appears earlier in cases that have previously had well administered mercurial treatment.
3. So far as our present cases are concerned we see no necessity of administering mercury, but can depend on salvarsan entirely.
4. We do not claim salvarsan an unfailing specific but one that does possess unusual potency.
5. We shall assume a cure only after repeated negative findings for at least one year and shall endeavor to impress upon our patients the necessity of further periods of observation indefinitely as a control on the activity or abeyance of the disease.
6. The great superiority of salvarsan over mercury is shown in the rapid and probably permanent disappearance of the serum reaction, after one or more injections of salvarsan, in patients who had been previously treated for from one to four years with mercury and in whom the serum reaction had remained positive.
7. In order to appreciate our results our treatments must be followed by serum reaction tests.

REMEMBER!

STATE SOCIETY MEETING,

Del Monte,

Tuesday, Wednesday and Thursday,
April 16th, 17th and 18th.

Railroad rates, one and one-third fare for the round-trip.

EXCERPTS FROM RECENT ITALIAN EYE LITERATURE.*

By VICTOR F. LUCCHETTI, M. D., San Francisco.

Mr. President, and Members of the Eye and Ear Section of the County Medical Society:—

In reviewing the recent Italian Eye Literature of the last few months, I have endeavored to give to you a succinct report of what I deemed would be not only of scientific value, but also of a practical character as well.

I have been fortunate enough to find a sufficient number of articles treating of subjects somewhat allied; so that I am able to give a symposium on external ocular affections.

There were many contributions which although very interesting, I thought best to eliminate on account of the length and abstruse manner of the subject matter presented therein; and they would probably be of less practical value to you than the few that I have elected to give on this occasion. Among these, the first contribution that appeals to me a sbeing of sufficient importance and worthy of mention, is one which treats of a series of interesting researches on the pathology of Trachoma as carried on by Casali of Florence; and, I am of the opinion that any channels of investigation that will bring about a solution of this arduous problem which is still baffling science, deserves our highest appreciation.

ON THE PRESENCE OF THE CORPUSCLES (BODIES) OF PROWAZEK AND HALBERSTAEDTER IN TRACHOMA AND IN OTHER AFFECTIONS OF THE CONJUNCTIVA.

Although it is only since 1907 that Prowazek and Halberstaedter described inclusion of cells in the epithelium of the trachomatous conjunctiva, there have been not a few publications on the subject, which partly confirm and partly contradict all that the above authors have maintained. Notwithstanding this fact, we do not as yet know with certainty what these bodies signify, and there is still some controversy as to their presence more or less frequent in affections non-trachomatous of the conjunctiva, and even in the normal conjunctiva; and for this reason, Dr. Angelo Casali of the University of Florence, with a series of important researches, has offered a new contribution for the solution of this problem, and in answer to the principal questions which at the present time are being agitated regarding the subject, and which are given as follows:

1. The Clamidozoon of the Prowazak and Halberstaedter is specific for trachoma and represents the etiologic factor (as maintained by P. and H., Lindauer, Bertarelli and others).

2. Similar bodies which are found in other affections of the conjunctiva although morphologically the same are biologically different. (Gallengo).

3. In the conjunctivitis of the newborn without any bacteriologic findings in which we find the bodies of P. and H., must come under the heading of trachoma. (P. and H., Lindauer, Volfrum and others.)

4. The bodies of P. and H. are specific for the affections of the conjunctiva by inclusion, and they do not have any pathological importance for trachoma. (Heyman.)

5. The bodies of P. and H. are nothing more than modified cocci or Neisser, and therefore, trachoma is a disease due to the coccus of Neisser. (Herzog.)

6. These bodies have neither pathologic nor diagnostic importance for trachoma. (Addario, Spoto.)

7. The bodies of P. and H. have a certain diagnostic importance for trachoma. (Brayer, Gruter, Bietti, etc.)

In order to answer these questions, Casali has made studies and researches in one hundred cases, divided as follows:

10 cases of chronic trachoma,

10 cases of acute trachoma or acute exacerbation,

10 cases of follicular conj.,

10 cases of acute catarrhal conj. caused by pneumococus,

10 cases of catarrhal conj. caused by the bacillus of Koch-Weeks,

10 cases of subacute conj., caused by diplobacillus of Morax-Axenfeld,

10 cases of spring catarrh,

10 cases of conj. of the newborn caused by coccus of Neisser,

10 cases of conj. in adults caused by coccus of Neisser,

10 cases of normal conj.

He states that he has found these bodies only in trachoma and in the conj. of Neisser. The figures and percentage are hereby given:

6 cases of chronic trachoma, or 60%;

7 cases of acute trachoma or acute exacerbation, or 70%.

2 cases of conj. Neisser in the newborn, 20%.

1 case of conj. Neisser in adults, 10%.

In the remaining cases the results were negative.

On this basis he answers the 7 questions as given above as follows:

First, as to whether the Clamidozoon of P. and H. is specific for trachoma, and represents the etiologic factor (as maintained by P. and H., Lindauer, Bertarelli and others), he answers "No."

Second, as to whether similar bodies which are found in other affections of the conj. although morphologically the same are biologically different (Gallenga), he concludes that it can only be viewed as an hypothesis.

Third, as to whether in the conjunctivitis of the newborn without any bacteriologic findings in which we find the bodies of P. and H., must come under the headings of trachoma (P. and H., Lindauer, Volfrum and others), he points out that this hypothesis does not explain why we find these trachoma bodies in diseases which have nothing to do with trachoma.

Fourth, as to whether the bodies of P. and H. are specific for the affections of the conjunctiva by inclusion, and they do not have any pathological importance for trachoma (Heyman), he finds that these are mixed infections, and that trachoma and

* Read before Eye, Ear, Nose and Throat Section of the San Francisco County Medical Society, July 25, 1911.

the conj. of Neisser can accompany one another alternately.

Fifth, as to whether the bodies of P. and H. are nothing more than modified cocci of Neisser, and therefore trachoma is a disease due to the coccus of Neisser, he answers that the opinion of Herzog is against himself, inasmuch that in a series of 20 cases of infection by the coccus of Neisser, he observed trachoma bodies in three.

Sixth, as to whether these bodies have neither pathologic nor diagnostic importance for trachoma (Addario, Spoto), he claims that their opinion is a little far fetched, and

Seventh, as to whether the bodies of P. and H. have a certain diagnostic importance for trachoma (Brayer, Gruter, Bietti, etc.), he also claims that if it is disputable that these so-called clamidozoa of trachoma are the real agents of this malady, his researches authorize him to maintain that they constitute by their presence a very important diagnostic factor. As they were never found in any of the conjunctivites such as the follicular spring catarrh, acute catarrh with hypertrophy of the papilla.

In questioning himself as to whether the bodies of trachoma are real organisms or represent products of secretion of the cell as maintained by Addario, he is inclined to admit rather the first than the second hypothesis, which is in keeping with the ideas of Lindauer and Heyman; and having found the nuclei of a binucleated cell invaded by the bodies of P. and H., in a condition of kariokynesis, he drifts away from the theory of Fleming that they are microorganisms, which are found as parasites in the different desquamating catarrhs of the mucous membrane; and he concludes that from believing that these bodies are true pathogenic micro-organisms, to recognizing them as specific agents of trachoma. There is a great difference, and he is rather inclined to the opinion of Heyman which is more nearly correct, that their presence in trachoma, and the conj. of Neisser, that it is a mixed infection; an opinion which is also supported by Noguchi, Bretti, and Betti.

Having presented the pathological contribution of trachoma, I have thought it advisable to submit a surgical contribution by Piccaluga of the University of Turin, for a new and rational method for the cure of Entropion and Trichisis of the upper lid. The method is as follows:

1. (a) Make an incision parallel to the margin of the lid and 3 m. m. from it, extending from the int. canthus to the ext. canthus, including the skin and orbic muscle.

(b) Make a similar incision parallel to the first, and 3 m. m. above it, so that there is formed a musculo-cutaneous bridge attached at both extremities.

(c) Dissect from the tarsus the above musculocutaneous bridge. Below the bridge loosen the skin at the margin of the lid as far as the cilia. Above this bridge loosen as far as the insertion of the Levator Palpebrae.

2. Resection of Tarsus parallel to margin of the lids at point of greatest curvature, and down to the conj. and including it.

3. Four silk sutures are taken in the form of a loop, and from each other. Each suture is armed at both ends with curved needles. One is inserted under the fibrous tissue of the Levator tendon and Tarsal ligament, at the point where it is inserted into the Tarsus. It is then brought out immediately at the anterior surface, making a narrow plica, and then passing in front of the Tarsus, and above the musculo-cutaneous bridge through the skin of the margin of the lid from behind forward, so that it comes out above the insertion of the eyelash. With the other needle proceed as above at a distance of 1 m. m. from the first, making thereby a loop, which has its central point fixed at the Levator tendon, and the ends of the sutures appear at the margin of the lid. The other three loops are disposed of in the same manner.

It is necessary to see that the small cutaneous bridge is caught between the sutures and the Tarsus, otherwise the effect of the pressure on the convex surface of the Tarsus would fail. The ends are tied with a bead in order to avoid necrosis of the skin.

The skin of the upper and lower margins are brought together by sutures. He applies a collodion dressing in order to fasten them to the frontal region.

The author applies the same operation for the correction of spasmodic entropion of the lower lid.

In the field of Ocular Therapeutics I refer to contributions, one on the use of Jequiritine in Malignant Growths.

In several of the Italian Clinics much has been done with the application of Jequiritine after the method of Rampoldi of the University of Pavia, in cases of rodent ulcers and Epitheliomata of the eye. The author applies it in small discs in ascending doses directly to the affected part. A quite violent reaction is set up; a heavy scab is formed which discharges, and is thrown off in a few days.

This occurs several times before complete healing is obtained, and it seems to have given most excellent and permanent results, and all who have used it in these cases, judging from recent literature, seem to be very enthusiastic about it.

Guaita of Florence has made considerable use and attained good results with the use of Scarlet Red, and a 3% salve in cases of Epitheliomata of the conj. He curetted the growth slightly and applies the ointment. For growths on the lids he uses 8%, but where he has found it of incalculable value has been as a cicatrizing agent after cataract operation, where the anterior chamber does not form on account of the margins of the incision failing to heal rapidly. The formula used is that of Kragca, and is as follows:

8 grams of Scarlet Red are triturated with oil and chloroform until the latter is evaporated, and then vaseline is added to make 100 grams.

In the field of Ocular Bacteriology an important contribution has been made by Verderame, who has discovered a new scarcina that has not as yet been described. Its characteristic features are that it is gram-negative. It develops in all cultural media at the temperature of the body. It is facoltative anaerobic, liquefies Loeffler's blood serum but not gelatine, does not coagulate milk, causes slight de-

velopment of H_2S, causes fermentation of maltose, levulose, etc. There is an absence of mobility, spores and filaments, and given its property to form a lemon yellow pigment in all cultural media, he has given it the name of Scarcina, citrea conj., not to be confounded with the Scarcina citrina, which has entirely different properties.

From experiments made, he finds that it is found in the conj. with other cocci and bacilli; but that it has no special pathogenic importance for the human being, which is in keeping with all other scarcina thus far described; with the exception of that described by Nagano, which was only pathogenic for rat and rabbit.

A CASE OF MALIGNANT EDEMA.*

By JAMES EAVES, M. B., Ch. B. Edin., Lane Hospital, San Francisco.

On account of the unusual symptoms and difficulties in diagnosis I decided to present this case, thinking it might have an interest to those who had not seen it. Not to trespass too much on your time I will direct your attention to the principal points the case presents.

Patient D. G. (Dairyman), age 37. Family history, etc., negative.

Present History: Ten days ago patient assisted in skinning one of three cows. These cows had died the previous day of an unknown disease. As far as the patient remembers they displayed no symptoms before death, being apparently well and had no subcutaneous glandular enlargements. Five days ago the patient noticed three pimples on his left wrist; one over the dorsal aspect, one on the volar surface and one over the distal articular end of the radius. The following day patient noticed swelling commencing in the region of the wrist, extending to the hand a few hours later. Two days later the swelling extended to the forearm.

Pain: first set in two days after the swelling commenced and was in the arm entirely, being steady and sharp in character. Pain is not increased on slight movement.

The upper limb has a tense hot feeling to the patient.

When the swelling first commenced, patient applied a hot flax-seed poultice, which was followed by a serous bloody exudate from the pimples.

Physical Examination: Patient a well nourished man of 37 years. Facies pale and somewhat anxious. Left upper limb and hand swollen to about twice the normal size, being tense and brawny. On the volar surface are numerous bluish black blebs, averaging about a centimeter in diameter, raised from the surrounding surface about 1 cm. These blebs are not distinct from one another, their borders fusing and following in a general way the natural folds of the wrist. On the medial surface of the forearm and extending up on to the anterior surface are about 30 blebs averaging about 1½ cm. in diameter, hemispherical, pale, transparent and containing presumably a clear serous fluid. Movement of the elbow is only limited by the swelling, pain on attempted movement being very slight.

Glands: epitrochlear, axillary, etc., not palpable.

Palpation: no crackling but marked pitting on pressure, the patient complaining of pain.

Edema: since admission becoming markedly increased, extending to shoulders and chest.

Operation: by Dr. Stanley Stillman, at 5:30 the same day of admission. Tissues freely incised to deep fascia. Edema extending to a depth of three inches. No pus. Clear, watery fluid exuding. No glandular enlargements evident. Hot boracic fomentations applied and whole upper limb soaked in a bath of 1-10,000 bichloride 1 hour in 3.

Progress of the case: Pulse and temperature on the first day little affected. Second day, weak and rapid pulse and rise of temperature to 102°, remaining so until the end.

Visits: On repeated visits the patient was pale and anxious. Later stages exhibited a picture of collapse.

Before Operation.

Morning of demise pulse could not be felt. Patient did not seem entirely conscious and died in the early hours of the morning with no respiratory difficulty the eighth day of disease.

Postmortem Findings: The points at autopsy that I think of chief importance are the following:: Edema extended down between the muscles to bone; no gas; axillary lymph nodes swollen, the largest being about the size of a small hazel nut; no hemorrhages.

Bacteriological Report: Fluid taken from blebs on wrist time of admission—fluid taken from incised wounds, etc., all negative. Bacillus of anthrax first isolated from smears from the axillary nodes.

* Read before the Cooper College Science Club, Nov. 6, 1911.

Commentary.

The patient did not suffer any evident distress. His memory remained clear throughout. No nausea or headache but exhibited to a degree a picture of shock. The blisters suggested the possibility of the case being one of malignant pustule, but this was rendered improbable by the failure to find the anthrax bacillus in the fluid of the blebs. It was a striking fact that with such marked objective signs there were so few subjective symptoms, i. e., the general symptoms did not bear any relation to the severity of the initial lesion, the general infection being to all intents and purposes slight.

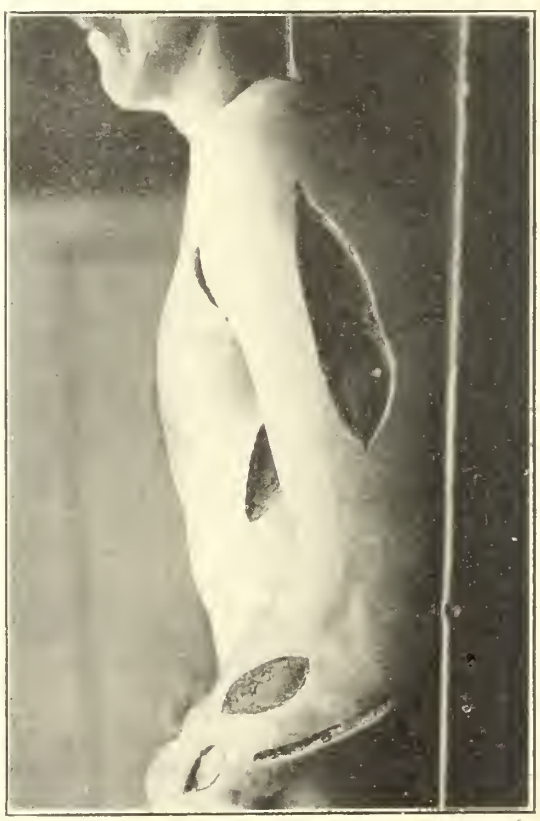
Edema: This is a question to which I would like to call your attention. Should we look upon this edema as being a reactive process injurious to the bacilli already present and unfavorable to their further development, or was it a passive edema arising from injury to the capillaries, blocking of lymphatics, etc.? According to our answer to this question we should either follow the expectant treatment or by incisions diminish the exudation and relieve the pressure.

The noteworthy point regarding this case was that it did not follow the usual course of a local anthrax infection but in the enormous edema present, and absence of any malignant pustule corresponded to the type described by Bourgeois as "Edème Malin," the so-called erysipelatous anthrax. This also agrees with the type described by Osler as the "Malignant Anthrax Edema" except that in this case vesicles and papules were present.

Discussion.

Dr Emmet Rixford: I have seen only one case to be compared with this. It was in 1892 in Roosevelt Hospital under the care of Dr. McBurney. The man had received a scratch and 48 hours afterwards his arm was enormously swollen to the shoulder and gangrenous to the elbow. In a few hours more the swelling had extended from the left shoulder to the opposite shoulder. The skin was somewhat reddened but in this case of Dr. Eaves there was little or no redness of the skin. Dr. Stillman has just said that possibly this edema was protective and that possibly his very free incisions relieving the edema hastened the patient's end. I would say that these incisions made by Dr. Stillman were of homeopathic dimensions compared to the tremendous incisions made by Dr. McBurney in his case. I do not know whether Dr. McBurney's patient died any sooner than Dr. Stillman's did. The clinical picture presented by these cases is very different from that of the more common gas bacillus infections of which I have seen a number. In one case the interesting thing was that the point of infection was within the patient's own anus; there was a small tear, apparently a rectal fissure, and from that extended the gas bacillus infection to the perineum and groin, following up the course of the lymphatics on both sides. The scrotum sloughed completely and although we made very extensive incisions and cleaned out the area very widely the patient lived but 2 days. Another case of this kind was that of a Chinese whose leg was amputated by a street car. In this case the crepitation extended to the middle of the thigh within 24 hours. I amputated at the upper margin of the edema but put in no stitches, merely ligating the vessels, and left the wound gaping and washed it with saturated solution of salicylic acid in hot alcohol. I did that because I saw a case in which Dr. L. L. McArthur of Chicago had done it; it was a case of gas bacillus infection of the thigh, where after excising a wide area he had washed the wound with saturated salicylic acid in hot alcohol and packed the wound with gauze saturated with the same solution. My patient recovered. In another case of gas bacillus infection of a compound fracture of the leg free incision resulted in recovery. In two other cases, similar incisions had no effect in staving off the death.

Dr. Wm. Ophuls: This case is very interesting. I saw the man clinically and from the clinical picture an infection with ordinary gas bacillus could be excluded for the reason that there was not any trace of gas in his tissue. However, it is possible that there may be infections with anaerobes with which there is not gas formation in the tissues. This is true in regard to cattle, where in black leg we may find no gas in the tissues and still get tremendous edema. From the apparently initial lesion it was impossible to obtain any growths, and although naturally from the history we thought of the possibility of anthrax, still we were of the opinion that we might exclude it on account of the absence of all signs of malignant pustule. Even at autopsy we had quite a little time discovering the real cause of the trouble. Careful examinations were made of the edematous tissues as well as that obtained from the muscle and still we were not able to find any bacteria. Then we found some large Gramm positive rods in some of the smears and came to the conclusion that we had to deal with one of the anaerobes and some unusual type of malignant edema. Some of the material, however, was sent to the Bacteriological Laboratory at Stanford and we received the report that the anthrax bacillus had grown quite typically. Later it was definitely shown that these bacilli were anthrax. It produced typical lesions in guinea pigs and other animals. There is no doubt, however, that this is an anthrax infection of an unusual type.



Post-mortem.

Dr. Leo Eloesser: It has often struck me that the pictures that we see of infections in California are different to those described in the text books and those seen in the clinics abroad. I saw a case similar to Dr. Eaves' at the City and County Hos-

pital a year and a half ago. The patient had been admitted under the diagnosis of erysipelas and I was called in to do a tracheotomy. He was asphyctic and comatose, but the trachea was free, so that I did not do anything; the man was moribund at the time and died about 6 hours afterwards. There was subcutaneous edema all over the upper part of his body. The edematous fluid showed a Gramm positive bacillus in great numbers which grew readily in aerobic cultures. I showed it to Dr. Ophuls and he said that it could not be malignant edema. I suppose that it was one of those erysipelatoid forms of anthrax. He had no initial pustule or lesion that I could discover.

Dr. James Eaves: In the treatment of such cases two divergent methods have been followed; the majority consider that prompt and extensive incision offers the only hope. Müller on the other hand regards the edema as a purely defensive process which should not be interfered with and recommends fixation of the limb and general stimulating treatment. He fears incision as likely to give rise to a general infection; the pathological facts on which he bases the expectation have, however, lately been called in question. In cases where there is a pustule, early excision is the only way. We had a number of cases of malignant pustule at Guy's Hospital, and excision combined with the use of Sclavo's serum gave excellent results.

MULTIPLE PAPILLOMATA OF THE LARYNX IN CHILDREN—REPORT OF TWO CASES.*

By E. C. SEWALL, M. D., San Francisco.

I wish to report two cases which have come under my care in the past few years, first because of their comparative rarity and second because of the ease with which the latter case was handled as compared to the former due to the improvement in technic which a very short time has brought to our aid.

R. C., aged 5 years, was brought to me in 1905. He was apparently in perfect health, but had suffered for years with "croup," hoarseness and increasing dyspnea. The family history was negative; both parents were healthy; he was an only child. The attacks of croup which he had were becoming more severe and during them he would only get his breath with the greatest difficulty. The hoarseness, which was marked, was becoming worse, so the voice was only a whisper, and at times even failed altogether. Examination showed a well-nourished child with no abnormality except the condition to be described in the larynx. This was filled with a papillomatous growth of a cauliflower nature somewhat pale, seedy, appearance, friable, which grew from both cords and the commissure. There remained only a small, irregular chink through which the child breathed. Three methods of procedure were carefully considered. Laryngotomy, or opening of the larynx externally and removal of the growths was rejected because of the probability of the subsequent return of the neoplasm.

Tracheotomy was not advised because that could always be done as a last necessity.

Removal of the growth through the mouth with laryngeal mirror and forceps presented great difficulty on account of the age of the child. Direct removal of growths through the Killian tubes had hardly been more than attempted at that time.

The condition of the child demanded relief; he was in constant danger of asphyxiation. Naturally I turned toward the most simple method, i. e.: removal through the mouth with forceps under guidance of mirror. After an educative course of some days I was able to remove a large bit of the growth and repeating the sittings was able to send the child home breathing fairly well. He was back again in some few months, however, and the performance had to be repeated. The growths occupied the larynx again as they did subsequently a number of times after being removed as well as I was able.

I was, however, now fairly certain that I could keep the child breathing until an age when the recurrence would not take place. Pathological examination showed the growths simple papillomata. The case at this juncture passed out of my hands as I left for Europe. The subsequent history is instructive. A laryngotomy was performed, the growths thoroughly removed and their base carefully cauterized. The opening of the larynx was successful in every way and healing was uneventful. However, the growths very quickly returned and then a tracheotomy was done. I saw him about a year later and he was in perfect health but wearing the tracheotomy tube.

The second case is that of a girl aged 14, also from one of the interior towns, being referred to me by Dr. Gould of Sonora. She came in September, 1911. Family history negative; again an only child. The duration of the trouble somewhat indefinitely given, but difficulty in breathing increasing gradually was becoming quite distressing. Complete loss of voice except for whispered sounds. Examination showed a healthy, normal child well developed but slightly anemic. The larynx showed the only abnormality containing several wart-like growths, mostly from the right vocal cord and anterior commissure. They were typically papillomata in appearance. Profiting by my experience with case 1, I began to train her for removal with forceps and mirror, but after a month of faithful daily practice I was unable to get her to hold still. I then gave her an anesthetic and with Killian laryngeal spatula fitted to the Brunnings handle and with the Brunnings forceps I removed the growth quickly, easily and cleanly. There was practically no bleeding, adrenaline and cocain having been sprayed directly on the growth and cords. The growth was a typical papilloma. When the patient emerged from the anesthetic she could produce a true voice sound but the following few days she remained in my care she was still whispering, due to the swelling and edema, possibly, though this was inconsiderable. There certainly was some change in the cords themselves, they were not normal in appearance and this condition may be associated with such growth though I find no reference to it in the literature at hand. Dr. Graham kindly assisted me at the operation. In this case the removal was accomplished with certainty and ease. I feel that the child can be saved more mutilating operations even though repeated removal of the growths through the tube be necessary.

The cause of these growths is not known. Irritation, that cause of hypertrophy of tissue, would seem to play no part in some cases as such growths have been demonstrated present at birth. The growths usually have their location on the true cords at the anterior ends and commissure. Rarely in the arytenoid region. The symptoms are interference with voice and respiration and general impairment of health such as the latter would suggest. The frequency of these recurring papillomatous growths in children is difficult to ascertain. "In a period of 10 years in the clinic of Dr. Chappell at the Manhattan Eye, Ear and Throat there was only one case. In another clinic in the same institution there were two cases in the same period." "Clark reports 12 cases in the Massachusetts hospital in the examination of 12,623 children under 14 years of age." "In 300 tumors of the larynx reported by Favel 206 were

* Read before the California Academy of Medicine, Nov. 27th, 1911.

papillomatous. Of this number only nine were in children under 15 years."

The growths possess the same characteristic to a certain extent as warts on children's hands and disappear at a certain age some time about puberty. Also are easily transplanted from one part of the larynx to another. Wherever a bit sticks there it has a tendency to flourish. The treatment is unsatisfactory. No drugs or local astringents have been of any use. Immediate tracheotomy has been argued by some because the stopping of the passage of the air might lead to the disappearance of the growth. In the hands of some this has proven satisfactory; however, there are cases on record where there has been recurrence after the wearing of the tracheotomy tube also a case where a tracheotomy tube had been worn for 20 years without disappearance of the growth. Tracheotomy may be necessarily resorted to where other methods do not avail. Laryngotomy is a method that has been employed in many cases and has its champions. Personally I feel that it is a method to be absolutely condemned under practically all circumstances. The fact that there are cases on record when it has been repeated 6 or more times and one case where it was performed 17 times in 2 years is sufficient to make it unwarrantable, if we consider the resulting cicatricial tissue.

Removal with the forceps and mirror is the ideal procedure, but not always possible.

The use of Killian's tubes or wider laryngeal spatula gives us a means of dealing, one would think, with most cases. However, considerable experience and more statistics are necessary to give this method its true worth.

In my opinion recurrent multiple papillomata should be handled in the following manner. The growth is to be removed by the mirror and forceps where this can be done and the treatment repeated just as often as necessary to give respiratory room. The voice is a secondary consideration. Where it is impossible to train the patient and I think considerable patience should be employed, the child is to be anesthetized and the growths removed through Killian's spatula or tube.

In case of any possibility of asphyxiation, tracheotomy should be performed, but after the crisis is past, I think the child should be anesthetized and the growths removed in one or other of the before mentioned ways and as soon as good space for breathing is established the tracheotomy tube be taken out.

Discussion.

Dr. Harry M. Sherman: Some years ago I was interested with Dr. Black in a case of papillomata of the larynx and in some ways the description which Dr. Sewall gave of his first case fits this in that a laryngotomy was done and the growth rmeoved; later it returned and the larynx was opened a second time and the growth again removed, and in spite of our efforts to keep the tracheotomy tube out we had to put it in, and I am certain that the child is still wearing the tracheotomy tube; this took place some years ago in the old Waldeck Hospital on Jones street. In this case it was exceedingly difficult to pick up and remove the papillomatous tissues; sometimes it was not easy to say what was papillomatous material and what was normal membrane, and the operation was itself, even with the larynx wide open, a disappointment. I think I may speak for Dr. Black in that. How it would be possible with reflected light to pick up and remove all the growth is difficult for me to understand. To do that a man must be a master of technic. In papillomata of the hands salicylic acid is frequently used and Dr. Black tried to make applications of salicylic acid in the larynx, but without result. I had hoped that we might get possession of the case again, but we have not done so, and I suppose that the child will go on wearing the tracheotomy tube for some time, as Dr. Sewall relates they are in the habit of doing.

Dr. E. C. Sewall: I think this must have been the same case of which Dr. Sherman has just spoken. These cases, as I said, need more experience and more statistics before we will be able to say we can remove these growths in all cases through the Killian method, and the fact that Dr. Sherman has opened the larynx externally in this particular case and has seen the difficulties of removing these growths, makes such a possibility doubtful.

SELECTED CHAPTERS IN THE STUDY OF SPEECH DISTURBANCES. NO. 2.—THE RESPONSIBILITY OF THE GENERAL PRACTITIONER TO THE CHILD WITH A SPEECH DEFECT, WITH SUGGESTIONS AS TO PROPHYLACTICS.*

By HENRY HORN, M. D., San Francisco.

It is beginning to be believed that the day of the general practitioner is departing and that the specialist is usurping the throne of the old family physician. No better refutation of this fact is needed than to observe the rapacious appetite of the general practitioner for special knowledge. It is the specialist who is being forced back into the ranks of the generalist by the tremendous border-line studies that are having a vast influence on his own narrow specialty.

This then is my excuse for introducing to the general practitioner what at first sight appears to be a special side of a special subject, and when it can be proven that 50% of all cases of speech defects are easily preventable, could the general physician, the teachers and the parents but have an elementary idea of speech prophylactics, it would seem that a campaign of education along these lines is surely needed.

The German Government have already, with their wonderful foresight in preventing anything which will later unfavorably influence the earning capacity of their citizens, taken measures to prevent this evil, but we have neither as a nation, as a state, or as a city, done anything in the way of preventive measures. The child with a speech defect, be it stuttering, stammering or lisping, be it word deafness or even a slight degree of weak-mindedness, enters our first grade without an examination of any kind and takes his chances with the normal child,—and with what result? He remains behind his class on an average of two years, and is two years longer a burden on the taxpayers; and, incidentally, is much more poorly fitted for his work, whatever it may eventually be. One per cent. and possibly more of the school children of San Francisco stutter; this means that over 400 of our children are stutterers, and that 10% or 4200 have some other form of speech defect. I give these figures with perfect confidence because it is the

* Read by invitation of the Alameda County Medical Society, November 15, 1910.

proportion of the stutterers in the German schools, and, strange to say, is exactly the percentage worked out in some of the Eastern cities.

These children are backward children, backward to exactly that extent that they cannot keep up with their classes. A study and an understanding of some of the general principles of speech defects will enable us to understand this backwardness and to prognosticate the outcome. Every child has inherent capabilities; the normal child develops his without special help, the backward child must be studied as an entity. Of all the accessories to the development of the mentally weak, speech is more important than any other of the special senses and it is the one that we can most easily manufacture for him.

Before specifically studying the subject of prophylaxis, I wish to say a few words as to the general etiology of speech defects. We have here no exception to the general rule that, given the causal elements, the treatment and cure is made very much easier. The empirical treatment of speech defects as carried on by hordes of advertising charlatans and others who have a superficial but no scientific knowledge of the subject may result in some permanent cures, but for the most part in only temporary ones. We have 300,000 stutterers in the United States. A fourth of them would recover of themselves without treatment, and this fourth is the percentage that makes the business of the guarantee cure specialist possible.

In this paper I will confine myself to but two forms of speech defects, so that what I am going to say will deal principally with the stutterer and the stammerer.

The clinical features of each case are so different that a definite typical type is hard to describe. The etiology of the trouble is equally complex. The temperament of the child is one of the principal predisposing causes. A phlegmatic child very seldom stutters; the picture is always of an easily excited and nervous individual.

The nervous temperament may be inherited from the parents. The direct inheritance of stuttering itself is very seldom, in fact some writers believe that it does not take place. This view is a bit radical and not supported by cases which have been reported by both Gutzmann and Cohn.

It is a common belief that weak-mindedness is a potent cause of stuttering. Such is not the case; in fact, the stutterer is usually up to the average or a little better than the average child. It is not on account of their stupidity that they are always two years behind the normal child, but because their physical infirmities make it impossible for them to keep up. The complete imbecile does not speak at all, the half imbecile stammers, but we very seldom indeed find a stutterer among them. In the Dalldorf Institute for Idiots, among 224 children 36% stammered, but only 7 children or 3% stuttered.

In contradistinction to these predisposing causes which we have just mentioned we have causes which depend upon the environment and which are to be spoken of later. We will show that during the school period the number of stutterers is almost tripled. At the time of the second dentition and at puberty the percentage takes a sudden leap upward.

The same thing applies to the time of puberty. Here we are apt to find stuttering developed where it was never before ever suspected. It is a time usually when the child is studying hard. In our American life, on account of social conditions, the boy begins to go out to parties and dances. His day is all too short and his hours of sleep are cut down. The nervous system is in a more or less unstable condition and it is not to be wondered at if the previous tendency to nervous disquiet is accentuated and we have a stutterer develop as a result.

We must never forget that when the child enters school at the age of six he may not be a stutterer in the ordinary sense of the term, but he will have a tiny tendency that way that the vigilant teacher will recognize as a slight, a very slight, deviation from the normal either in the pronunciation of the words, in a slight hesitation over certain words or in a slight embarrassment in speaking. Here is where the teacher, if he could but have his attention called to this subject, could be of inestimable value to the child and to his future life. By the closest observation, with some sort of an idea of what to look for, he would be able to recognize preliminary symptoms such as beginning changes in the breathing, repetition of initial vowels or consonants, etc., even sooner than the child's parents. In school the environmental conditions are entirely different from those at home. Here the child is ever afraid of the shame

(Continued in February.)

MECHANICAL EFFICIENCY.*

By JAMES T. WATKINS, M. D., San Francisco.

The purpose of the group of lectures of which this is one is to give you some insight into the art, or as it is fast becoming, the science of right living; right living especially as it applies to yourselves and to your charges. In my own lecture I shall briefly direct your attention, first, to what we have come to regard as the state of maximum efficiency of the human body. I shall then dwell upon conditions which are essential to this state of well being. Finally, I shall discuss some of the commoner causes of physical inefficiency. Such a study is peculiarly the function of that branch of the healing art called orthopedic surgery. While the latter used to be defined as that specialty which deals with the prevention and cure of deformities, to-day its scope has become broadened till it might properly be described as "Scientific Management" applied to the human body. To certain aspects of this subject, it is my privilege at this time to direct your attention.

More than anything else the human organism resembles a delicately balanced machine, which is called upon to perform work whose character varies in inconceivably many ways and degrees. Work of the higher mental processes, work of the viscera, work of the muscles, has to be performed under constantly varying conditions and constantly changing speeds.

When the several parts are working rightly, there is a minimum of friction, and the efficiency of the individual is at its maximum. We call this condition perfect health. Any departure from this state of correlation, increases strain or friction, wastes energy and, by just so much, lessens efficiency. No

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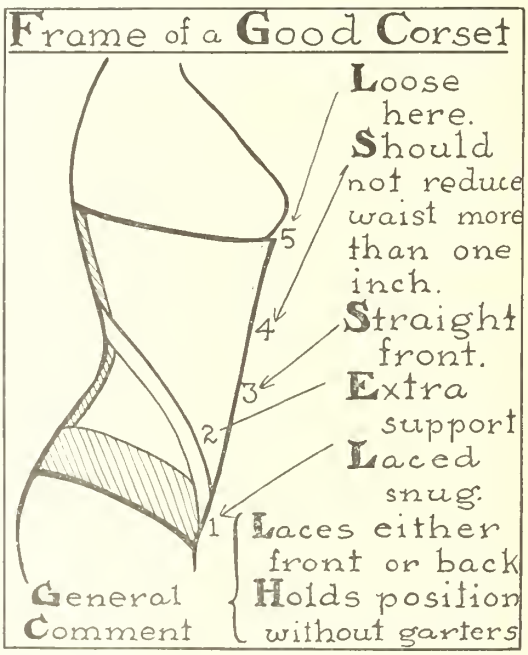
one part can be strained without affecting the whole.

For esthetic reasons the posture of selection in the upright position has long been recognized as that in which the individual, without standing on tip toe, can make himself as tall as possible. Head erect, chin in, shoulders thrown back, chest high, abdomen flat, spine slightly concave forward in the region of the thorax and slightly concave backward in the lumbar region; the pelvis being tilted forward so that its axis makes an angle of 60 degrees with the horizon.

A broader comprehension of anatomy and physiology has now taught us that this is also the attitude of greatest efficiency. In this position, the normal individual is able to stand with the least muscular strain, and from it he is able to move in any direction with the least muscular effort. Speaking more specifically, not only the muscle groups which dominate the head, but those which attach the arm to the body, are under slight but not fatiguing tension; the same thing being equally true of those controlling the trunk and lower limbs. Raising the chest has deepened it; thereby giving more room for the ex-



pansion of the lungs and movements of the heart. At the level of the third lumbar vertebra—a little above that of the umbilicus—the abdominal cavity is so narrow from before backward that, in this plane, it scarcely constitutes more than one-third of the thickness of the body. From here it slopes rapidly upward and backward, increasing in all diameters. Below this level the cavity is small, and is filled up with loose folds of the small intestine. The sharp inclination backward of the pelvis causes the upper end of the sacrum and its superimposed muscles to form a shelf which shields the pelvic contents from the pressure of the viscera above.

There is not space here to detail the mutual relations of all the abdominal organs; it must suffice to say that *when the body is erect* the various viscera rest upon ledges or shelves, formed, for the most part, by portions of the abdominal walls; and what downward thrust they exert is received by the lower portion of the anterior abdominal wall. This last fact must make clear to one how important is the need of a firm abdominal musculature, how harmful whatever may tend to weaken the abdominal muscles.

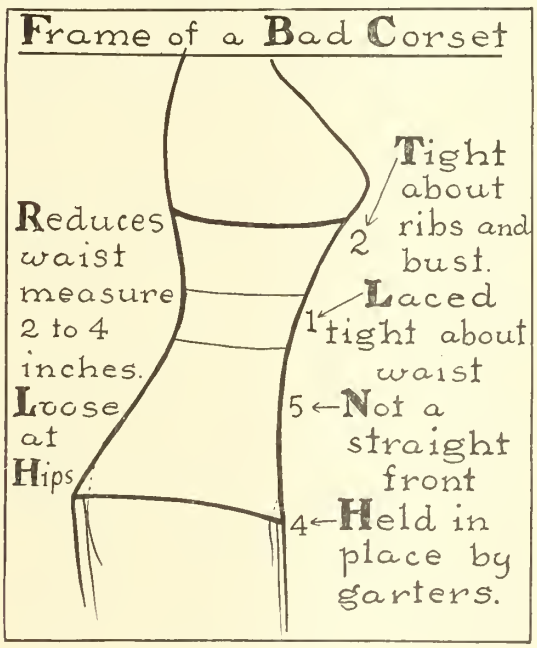
My description would be incomplete did I not direct your attention to the mechanism by which we stand without muscular strain. Normally when we stand erect the leg rotates outward through a vertical axis on the foot partially locking the ankle joint; and at the same time the thigh rotates inward on the leg locking the knee joint. The center of gravity of the trunk lies behind a line connecting the hip joints; the consequent tendency of the trunk to rotate backward about this axis causes the heads of the thigh bones to be crowded against the strong Y ligaments which form the anterior boundaries of these joints. While a slight physiological tension of the muscles surrounding all of these joints is present, nothing like muscle strain is felt. If on the other hand because of any condition like for instance pronated foot, which is the first stage of "flatfoot," the locking at ankle, knee and hip does not occur, the leg must be held erect upon the foot, the thigh upon the leg, and the trunk upon the thigh, by the exertion of undue muscular force. And as a consequence of this strain, we commonly have pains referred either to the foot, the calf, the posterior and outer side of the thigh, or to the back. I shall discuss the causation of distortions of the foot more fully later.

The causes of deviations from the normal posture of maximum efficiency are to be seen in defects of many organs. Vicious postures of the head may be due to such congenital causes as wry neck, or to defects in the shapes of the joints of the occipital bone with the atlas, the vertebra which supports the head. Occasionally there may be a paralysis of some of the muscles controlling it. The most frequent causes, except muscular weakness, are defects of vision, especially astigmatism. Occasionally defects of hearing are responsible.

Deformities are either congenital or acquired. The former are comparatively rare. Their interest, from the point of view of the eugenist, lies in the fact that they are likely to be reproduced in at least some of the patient's offspring. Acquired deformities, on the other hand, hardly ever reappear in the children.

In thinking of deformities, especially of those which are not the result of injuries, you must remember that they usually represent the extreme of some normal motion. For example, each of us can voluntarily cause his foot to assume the turned-in position which we recognize as "clubfoot." The main difference between ourselves at birth and a clubfooted baby is that we can cause our feet to recede from the clubfoot position and he can not. If this baby now proceeds to use his foot while it is in this distorted position the bones will undergo definite changes in shape and size, the result being a permanent deformity. This brings me to the enunciation of a law, viz., that *deformity is the result of improper function.* If you should fix my foot in the clubfoot position and require me to walk on it that way for some months, as a result of this improper function, I would have a permanent deformity, a true clubfoot.

Spinal deformities are congenital or acquired. Sometimes one of the vertebræ is incomplete. Instead of being a cube, a vertebra may be triangular in shape, one-half the body being lacking. In that event, all the vertebræ above it deviate from the vertical, and in trying to return to it, form one other of the varieties of spinal curvature. *Usually* spinal curvature is acquired. Because of defective teeth, for example, a child has poor digestion. This, in turn, produces, among other evidence of malnutrition, weak muscles. These tire easily—especially under the strain of postures induced by ill-fitting schoolroom furniture—and children no longer sit up straight but slouch forward, hanging, as it were, on their ligaments. Now, if I bend forward and to the side, my spine will assume a certain posture which is the extreme of normal motion in these



directions. If I maintain this posture for a sufficiently long time, a portion of the spine loses its mobility and becomes fixed. When I attempt to straighten up the fixed portion will remain bent, even though the portions of the spine above and below it do not, and I shall present one form of that condition which we recognize as spinal curvature. That is, it represents the extremes of two normally present motions which, in the affected segment of the spine, have become fixed. I may add that spinal curvature cannot occur except in flexion and side bending.

It at once becomes manifest as our duty to require our charges to maintain the erect posture at all times. It is no less manifestly our duty to make it possible for them to sit up straight by giving them seats and desks at which they can sit erect without strain. Large men always look and feel uncomfortable on small chairs, and small men get lost in big ones, but it has not occurred to our predecessors that large and small children might do the same thing. That is, we standardized our schoolroom furniture without being able to standardize our children. I shall never forget the backaches I had thirty years ago down in the old Washington Grammar School.

Perverted ideas of the esthetic in matters relating to personal adornment are responsible for by far the greatest number of bodily distortions; though some physical defects are the consequence of theories of dress based upon mistaken ideas of anatomy. As an example of the second group, I would recall to you the fallacy that a growing child's clothes should hang from the shoulders. All the varieties of ready-made children's waists are designed with this idea in mind. Yet if you will look for an instant at the skeleton of the shoulder girdle you will recognize that this contention must be erroneous. For its only bony attachment to the trunk is at the inner end of the clavicle, or collarbone. Elsewhere it is attached loosely by muscles. Further the ribs upon which the scapula, or shoulder-blade, rests slope downward and forward so steeply that any pull or thrust upon the point of the shoulder must cause it to slip downward and forward to assume the posture which we recognize as "round shoulders"; while the posterior edge of the shoulder-blade projects backward as a sort of angel's wing.

You will recall that a Chinaman can carry all day long two great baskets slung on the ends of a pole—baskets so heavy that most of us could not lift them. You will further recall that he does *not* balance this pole on the *end* of his shoulder: on the contrary, he centers it as nearly as possible on the spine, through the short ribs at the root of his neck. Centuries of drudgery have taught him what a study of anatomy will teach you, namely, that weights, including that of clothes, may be supported here, at the root of the neck, with the least disturbance to the poise of the individual.

When I was a student of medicine a strange mistake had crept into the text-books on physiology as a consequence of the misinterpretation of observations made on persons who were the subjects of certain dress distortions. I was taught that the respiration of men was essentially different from that of women. Outline illustrations were pictured showing that masculine respiration was essentially abdominal in type and caused by the rise and fall of the diaphragm, whereas that of women was thoracic and due to the ascent and descent of the ribs. We were told to wonder at the wisdom of Mother Nature. She made a woman breathe above the waist because it would not do to disturb the abdominal organs of an expecting mother, whereas a man was permitted to breathe after the manner of the lower animals.

Just as I was at the height of my admiration for Mother Nature's methods, along came one Kellogg. With an instrument called a sphygmograph, he took tracings which showed conclusively that Indian and Oriental women, expecting mothers as well as maidens, breathed exactly as men did; that men, when put into corsets, developed a thoracic type of breathing identical with that of women; and, finally, that women who had been addicted to corsets, but had broken off this habit, acquired a type of respiration more nearly abdominal than thoracic.

The corset is an institution of too venerable an antiquity for me lightly to speak disrespectfully of it. Nor would I venture to ask any one of my

hearers who might perhaps have acquired the habit in early youth to disregard the fiat of convention by discarding it now. Further, I am prepared to agree that some corsets are very much more injurious than other corsets. But I would lay before you certain facts, and to your inevitable deductions I would add some of my own based upon professional experience.

We know that when one is confined to bed from any cause, one's muscles become quickly and progressively weakened. We know that when an arm, for instance, is confined in a plaster cast it "withers," as the saying is, that is, it atrophies. Further, and conversely, we know that the development of a part implies its use and some proper exertion in its use.

Primarily, corsets were hammered out of iron by the castle armorer, and worn with more fortitude than wisdom by the chatelaine for their cosmetic effect. They emphasized the fact, so to speak, that women were not men—which was the most that was demanded of their wearers in those days. To-day they constitute a support for the lower thoracic and for the abdominal walls and, besides impeding the descent of the diaphragm—hence the thoracic respiration before mentioned—they splint and consequently must and do weaken the abdominal musculature. But we saw a while back how absolutely essential to scientific management of the body was a vigorous set of abdominal muscles. In this way a corset may be said to make directly for functional inefficiency on the part of the wearer. When I was a student in Europe, I recall seeing women who worked all day in the fields and yet other women who, as hodcarriers, climbed up and down ladders for four and five stories all day long, carrying loads of bricks or mortar. In Japan young girls coal the great ocean-going steamships. Between them all they refute absolutely the idea of woman's physical inferiority—but these women do not wear corsets. It is a matter for recurrent comment among medical men with what relative ease barbarian women give birth to their young. No small part of the distress experienced by their civilized sisters may be attributed to the fact that, through weakening of their abdominal walls by corset splinting, their expelling power has become largely dissipated.

Finally, I wish to remind you that while men occasionally come to the operating-table, it is upon women that the abdominal surgeons fatten and grow rich. How often do you hear of a man having a floating kidney, or an enteroptosis, as sinking down of the abdominal organs is called? On the other hand, are you not forever hearing of women who have them? I am. And why is this? Is it not because the abdominal walls of women have been relaxed and rendered mechanically inefficient—have, like the arm in the plaster of paris cast, become *withered* by the compression and support of the corset? Why, if abdominal surgeons had a spark of appreciation in them, they would erect a monument to their true and tried friend, the ordinary corset!

Now, it is not for you nor for me to discard our defective dress. In us the mischief has been done. Already our organs either float or sink. I doubt if most of us could get along without these things. Ephraim is indeed wedded to his idols! Nevertheless, we should frankly and openly bear witness to the errors that we have made ourselves—or that our parents have made for us—so that those who come after us may profit by our sad experience. If you can only succeed in persuading adolescent girls that to put on corsets does not transform them into women nor render them more adorable, but may indeed be the beginning of things which make for invalidism, you will have done much toward increasing the happiness of the next generation of women and, at the same time, irreparable injury to the next generation of doctors.

I said a moment ago that some corsets were much more injurious than others. The least harmful type of corset is that which takes its support from the pelvis and can keep its place without the aid of garters or straps. It has a strong upright upon each side of the spine which follows the curves of the body behind. The front is straight. It must not decrease the normal waist measure more than one inch. At its upper border it should be slightly larger than the body at this level. The lower or pelvic portion, which is not more than a handbreadth reaching from the iliac crests to the upper surface of the trochanter, or prominent upper end of the thigh bone, should be laced with an independent lace. Tight lacing should be confined to this portion. The mischief done by such a corset will be confined to the weakening, through splinting, of the abdominal muscles. It will not cause displacements of the viscera.

Distinctly harmful, however, is the type of corset which is held in place by being cinched about the waist. It constricts the waist sometimes as much as four inches. It is tight about the ribs and bust, loose about the hips, and is kept from riding up by garters. Instead of a straight front it has one which slopes in toward the waist from above and below. Such a corset will not only injure the abdominal musculature but bring about permanent and pathological dislocations of the thoracic and abdominal viscera.

It would seem that man began to decorate his feet as soon as he found that their unimpeded use was not essential to the struggle for existence. The Egyptian statuary shows normal feet, but we know that it was required to conform to a strict convention. We also know, however, that the Egyptians wore pointed shoes. The deduction is inevitable that their feet must have followed the moulds in which they were encased and must have, therefore, been correspondingly deformed. No people have ever studied dress with a view both to efficiency and also to preserving the symmetries of the human form, as did the Greeks. Yet even the Hermes of Praxiteles shows an abnormal deviation outward of the four outer toes, caused by the thong of the sandal which passed between the second and great toes. From the Dark Ages civilization emerged saddled with all manner of dress deformities, some of which, like our old friend the corset, obtain in modified form to the present day. You will recall that Scott, in his immortal description of the Field of Ashby de la Zouche, says that Prince John wore shoes, whose pointed toes were attached to his knees by gold chains. "The Golden Lilies," as Chinese poets have called the bound feet of their women, are, it

appears, a matter of no great antiquity. So much for evidence that the tendency to decorate feet is as universal as it is ancient.

Now again remember, I am not asking *you* to wear square-toed shoes, nor to discard high heels, nor to do anything except to seek out that last in which your individual feet find comfort and act well. The time when your feet and mine could have been made anatomically perfect is past. By proper orthopedic treatment they can be relieved of disabilities, but anatomically perfect they cannot ever become. Dr. Blodgett, an orthopedic surgeon of Boston, reported that among one thousand persons who had presented themselves with defective feet, all, or almost all, had been relieved of their disabilities and not in one instance had a defective foot been made into a normal foot. Distorted feet cannot be cured, they must be prevented.

Ideally shoes should be made over individual lasts; this is however especially with growing children, not practicable. I have therefore selected several types of commercial shoe which have, in my experience, most often proved satisfactory. Frequently one has to take one of these shoes and modify it to meet the needs of the individual. This, like plate fitting, can of course only be done by one trained to the work. One of the most lucrative features of orthopedic practice is the correction of ailments which have been aggravated by shoe-store fitted plates.

Little growing children should wear loose, nonshrinkable stockings and shoes made on the sandal type of last. I prefer low shoes to high, since the so-called "uppers" tend to check the up and down motions of the foot on the leg. That "uppers" support the ankle is a fallacy. An ankle which is so weak that it cannot be balanced and must be supported, calls for a bar up the side of the leg. The "upper" merely conceals the distortion in these cases. It has not leverage enough to correct it.

The proper shoe is that whose insole corresponds with the outline imprint on paper of the stockinged foot, but has a somewhat longer toe. Its inner border should be higher than its outer, just as the inner border of the foot is higher than its outer border. The joints where side to side motions are made occur rather more than three-fifths of the way from the toe to the heel; therefore the shank of the shoe should be short. A long narrow shank would splint the foot and side to side motions would be impossible. The heel should be broad, advanced well under the instep, and high or low according to the character of the individual foot. Of course, in the really normal foot no heel is needed; but we do not get really normal feet. This is neither the time nor the place for me to enter into an exhaustive discussion of defective feet.

Here and now I can only tell you that every child who "toes in" is either wearing too short a shoe or is trying to save his arches by contracting the muscles at the inner sides of his feet; every child who "runs over" his or her shoes, who shifts from one foot to the other, who stands with the legs far apart, or with the knees locked, who persistently leans up against the furniture during recitation, who regularly walks with a shuffling, springless gait, consciously or unconsciously, is a sufferer from weak feet, and is in need of proper medical attention. Weak feet are not always manifested by symptoms directly referable to themselves. Lately I submitted to the Academy of Medicine a report on the following unusual cases:

One patient, where the end of the back, the so-called os coccyx, had been removed for symptoms typical of disease of that region, "coccygodynia" it is called;

One lady who had been subjected to capital operations for backache;

One man suffering with painful knees;

Two young women who had been supposed to have hip trouble; and

Two men who were said to have disease of the spine.

All of these patients were shown to have defective feet, and though the feet themselves had at no time presented subjective symptoms, treatment of this foot condition gave relief from the other and apparently dissociated symptoms. I merely cite these cases to show you how important a matter really is the hygiene of the feet.

I think that on reflection my purpose in this paper will be apparent to you. The whole trend of modern thought is toward economy. Economy of natural resources, economy of time, economy of labor. "Scientific Management" it has come to be called. Here I have attempted to show you as briefly as might be, how scientific management applied to the employment of that most complex of all machines, the human body, and to suggest to you some of the kinds of ways in which its usefulness might be hampered by unscientific management. Against these you should unceasingly be upon your guard.

To those who will apply the principles suggested, a new field of interesting speculation and observation will open up. The study of eugenics is as yet in its infancy. Many problems, which have not here been touched upon, will spring up to perplex you. But in seeking to solve them, you will yourselves attain to a higher intellectual level.

Remember always that you are, yourself, not an imitator, but an original observer, and your own original recorded observations in this field of endeavor will add something to the sum of human knowledge, will accomplish somewhat to the uplift and betterment of the race. For to no one who seeks it humbly is the truth ever wholly hid.

350 Post Street.

A CASE OF BROWN-SEQUARD'S PARALYSIS FOLLOWING A STAB WOUND OF THE BACK.*

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Case—R,—Age 33, Male, Single—Mexican.

Diagnosis: Hemilesio medullae spinalis.

History: On the evening of Oct. 1, 1911, he was stabbed repeatedly in the back with a knife. He fell to the ground and has not walked since. He says that he noticed shortly after the injury an

* Read before the Los Angeles County Medical Association, November 17, 1911, with presentation of the patient.

inability to move the left lower extremity. He received first aid at the Receiving Hospital where no paralysis was noted. Upon the following day he was admitted to the Los Angeles County Hospital in the service of Dr. J. J. Van Kaathoven, who kindly permitted me to report the case. Upon the day of admission to the hospital on Oct. 2nd, Dr. Hart, interne, noted a paralysis of the left lower extremity and thinks that at that time it was complete, but of this he is not positive. He also noticed a loss of touch sensation in the right lower extremity. I saw him first on Oct. 3d, and a careful examination at that time showed several stab wounds of the posterior thoracic wall, one of which upon the right side penetrated the lung, as evidenced by emphysema cutis. About on the level of the eleventh thoracic spine and very slightly to the right of the median line was a wound about one-half inch long.

Neurological Examination: Left. There was loss of voluntary motion in the left lower extremity with the exception of feeble movements of the foot and toes. He could very feebly adduct the thigh and upon attempting movements the adductor muscles could be seen to contract slightly. Upon attempting to extend the leg upon the thigh slight contraction of the M. vastus lateralis followed but no movement of the leg and he could not maintain the extended position when the leg was so placed. There was absence of all deep reflexes. The superficial reflexes were not noted except the plantar which was absent. Sensation upon the left side was normal. No hyperesthesia was noted. (No interpreter being present this is not positive.) He correctly recognized the position of the extremity and passive movements were correctly interpreted. The left foot and leg felt distinctly warmer than the right to touch with the hand.

Right. Voluntary movement in the right lower extremity was normal. Upon testing sensation it was found that upon the right side below a transverse line drawn about three fingers' breadth below the tip of the ensiform, he could not feel the light touch of a cotton ball, that he was totally insensible to a pin prick and that he could not distinguish between hot and cold test tubes. The sense of position and muscle sense were present and he could recognize a firm touch. (The loss of tactile and pain sense were sharply defined at the median line of the body even to the penis and scrotum.) The control of bladder and rectum were seriously interfered with but not lost altogether as during his waking hours he had control of them.

Oct. 4th. On this day examination made with the aid of an interpreter was more satisfactory. It was found that upon the left side the paralysis had diminished. The foot could be moved more freely both in dorsal and plantar flexion. He could feebly extend the leg upon the thigh and hold it momentarily in extension. These movements, however, were quickly exhausted. There was still absence of the deep reflexes. It was now positively ascertained that upon the left side slight hyperesthesia existed, especially over the abdomen at the upper border of the lesion. Light touch was described as a burning feeling. Upon the right side, light touch with the finger and cotton ball were readily distinguished over the entire area. Analgesia, however, still existed. He could not distinguish between a thrust with a sharp pin and a thrust with the finger, both being distinctly felt, indicating retention of pressure sense. Temperature sense was wholly absent, the touch of the test tubes being readily recognized. The deep reflexes appeared normal. The superficial reflexes were not tested with the exception of the plantar which was absent upon both sides.

On Oct. 6th there was some, but slight, improvement in motility. The cremaster reflex was found to be absent upon the left side but present upon the right. Otherwise the condition was practically unchanged. The function of bladder and rectum have returned to normal.

On Oct. 9th the improvement in motility had continued. The patellar reflex had returned upon the left side but was feeble. There was no longer increased temperature to touch of the left side. Otherwise condition was unchanged. At present, Nov. 17, we find that he has recovered to a great extent voluntary movement upon the left side so that practically only muscular weakness remains. No ataxia is evident. The hyperesthesia has disappeared. There is exaggeration of the left patellar reflex. Upon the right side there still exists total analgesia and loss of temperature sense.

In 1858 Brown-Sequard described the symptom-complex resulting from a hemilesion of the cord, and a mass of experimental and clinical evidence since that time has resulted in a confirmation of his findings. It is true that the experimental evidence has not always been uniform, nor always in accord with the clinical evidence in man, and yet an analysis of the mass of evidence at hand, by the master mind of Kocher, has led him to the conclusion that in man the presence of the following group of symptoms is diagnostic of a hemilesion of the cord.

Upon the Injured Side:

1. Motor paralysis—appearing immediately in its greatest intensity but as a rule diminishing in the course of days and weeks, until only muscular weakness remains, excepting those muscles whose motor cells are directly destroyed.
2. Atrophy from inactivity of the muscles without loss of farradic irritability and without reaction of degeneration.
3. Vasomotor paralysis, as indicated by increased temperature of the paralyzed limb. This recovers rapidly as a rule.
4. Hyperesthesia for touch, pain and in many cases for heat and cold. In some cases this hyperesthesia, absent at first, has appeared later with the onset of myelitis.
5. Loss of muscle sense.
6. Increase of the reflexes, especially of the tendon reflexes. This may be preceded by a phase of diminished reflexes, which is frequently so short as to escape observation.
7. Pertaining only to injury of the cervical cord: Paralysis of the oculopupillary and vasoconstrictor sympathetic fibers, as indicated by contraction of the pupil, narrowing of the palpebral fissure, recession and diminished tension of the bulbus.

Upon the Opposite Side to the Injury:

8. Anesthesia—either total to all sensation, touch, pain and temperature, or as is relatively frequent, retention of the sensation to light touch with total analgesia and loss of temperature sense. As a rule the anesthesia improves, as does the hyperesthesia of the other side. The reappearance of touch sensation may precede that of pain sensation and this the temperature sense, either for heat or cold, showing the independence of their paths of conduction.

9. The function of bladder and rectum may be retained or but transitorily affected.

An analysis of our case shows an almost perfect coincidence with the findings as set forth by Kocher. We have exquisitely demonstrated upon the side of the lesion:

1. Paralysis. At the time of neurological examination on the third day, complete with the exception of slight movements of the foot and of the thigh adductors, but showing rapid and progressive improvement until now only muscular weakness remains.

2. Slight muscular atrophy from disuse. The electrical reactions have not been tested but are undoubtedly consistent.

3. Vasomotor paralysis as indicated by increased temperature to the hand, which disappeared within a few days.

4. Hyperesthesia to touch, first noted upon the fourth day but possibly existent before that time. The hyperesthesia was never very marked and seemed to exist for touch alone which was described as a burning sensation. No very evident hyperalgesia was noted.

5. Muscle Sense. No loss of muscle sense could be detected. The position of the limb was always correctly interpreted and all movements readily recognized.

6. Reflexes. The patellar reflex, at first absent, was noted as present on the ninth day and became slightly exaggerated. Ankle clonus never existed. The superficial reflexes have been persistently absent.

7. The lesion in our case being below the cervical segments, no ocular symptoms would be expected.

Upon the Opposite Side:

8. Anesthesia. At the first examination a loss of all sensation even to light touch seemed to exist, but in the absence of an interpreter, this is not positive. Upon the third day the tactile sense was present and sensation to touch and pressure, but there was total loss of pain and temperature sense and this has existed to the present time. Position and muscle sense were present from the first examination.

9. Bladder and Rectum. There was at first retentio urinæ and partial incontinentia alvæ but within a few days these functions had returned to normal.

In the absence of direct demonstration by examination of the cord, but from comparison of the clinical findings in other accepted cases of hemilesions of the cord, I think we are justified in believing that in this case the left half of the cord has been divided with a probable exception of part of its posterior column. (Retention of muscle sense upon the injured side.)

An explanation of the clinical findings in cases of hemilesion leads to very interesting conclusions regarding the physiology of the spinal cord. The appearance of motor paralysis upon the side of the lesion proves that the motor fibers for the most part occupy paths upon the same side as the muscles which they supply. The rapid recovery of motion leads to the conclusion that regeneration of these fibers rapidly occurs or that other paths exist which take over the function of the divided tracts. That the latter conclusion is correct is deduced from the evidence that a descending degeneration of the divided motor tracts is invariably found. Moreover, animal experimentation has shown the very conclusive fact that after recovery of motion following a hemisection, a section upon the opposite side, a few segments higher up, is followed by paraplegia, proving conclusively that the opposite side of the cord had assumed the function of the half first divided as far as its motor fibers are concerned. The existence of these reserve fibers has, moreover, been demonstrated by Edinger. The vasomotor paralysis upon the same side, with its rapid recovery, leads to a like conclusion concerning these fibers. The explanation of the sensory phenomena requires a more complicated reasoning and as each variety of sensory impulse is conveyed by a separate and distinct path, each must be considered separately. The loss of muscle sense for the recognition of position, movement and pressure which occurs upon the same side as the lesion in pure hemisection, indicates that this path likewise runs uncrossed in the cord. From experimental and clinical evidence it appears that the posterior columns those of Goll and Burdach, consist of these fibers. The loss of sensation of pain and of temperature sense upon the side opposite to the lesion, with their retention upon the injured side, indicates the crossing of these fibers shortly after their entrance into the cord and their ascent in paths lying upon the opposite side. That these fibers are distinct is shown by the recovery in some cases of the temperature sense with persistence of the analgesia. The fact of recovery would indicate the existence of reserve fibers upon the opposite side. The explanation of the phenomena of tactile sensation, especially of the hyperesthesia upon the injured side with absence or transitory existence of anesthesia to light touch upon the opposite side, requires a complicated hypothesis. Kocher explains these phenomena upon the existence of both crossed and uncrossed paths for the conduction of tactile sensation. The uncrossed fibers ascend without interruption but the crossed fibers have for the most part indirect conduction, as they arborize about cells in the posterior horns, from which cells a second neuron begins, and after crossing in the anterior commisure, ascends upon the opposite side. These cells of the posterior horn possess the power of summation of impulses. Upon the side of the lesion all of the direct fibers being severed, all sensory impulses must pass through the cells of the posterior horns, which results in their interpreta-

tion as pain, until the conduction is taken over by the crossed fibers which are not interrupted. Upon the side opposite to the lesion these impulses pass undisturbed by way of the uncrossed fibers or suffer temporary disturbances by the severance of the crossed fibers. An explanation certainly ingenious.

SOME MISINTERPRETATIONS IN THE TEACHING OF GROSS ANATOMY.*

By H. O. WHITE, M. D., Los Angeles.

Anatomy in its great outline is a science surprisingly and sufficiently exact. The exceptions are too few to admit of hesitation about what is right and wrong; it is therefore, perhaps, next to mathematics in the precision of its indications, and in the value and certainty of its rules. It is, for these reasons, in every way suitable that in an operation or in the treatment of a disease, where the condition of organs is to be considered, that we shall look with full assurance for what is most common, rather than to hesitate and to halt between two opinions. Since I am sensible of the importance of reflecting upon, and of observing maturely the matters treated of, I have done my best to be accurately informed by repeated dissections and by reference to the best authorities.

The term Anatomy as here employed includes Gross Anatomy only, as is taught at present in every reputable institution of learning. There are numerous instances where anatomical text-books and teachers of Anatomy, to my estimation, interpret some parts of the subject erroneously, incorrectly, thereby conveying an improper understanding of the region in question and unintentionally misleading the student who takes everything for granted.

In attempting to enumerate the various parts or regions erroneously imparted to the student, I wish to state that my conclusions are based on:

First, the teaching by anatomists of this country in at least a dozen of the best medical schools which I personally visited.

Second, the comprehension and interpretation of those regions in question by graduates of reputable medical institutions as taught by their teachers.

I wish nevertheless to be understood at the outset that it is not my intention to criticize older and much abler teachers nor to reflect upon any institution of learning, but in the hope of eliciting a discussion and thereby, perhaps, enlighten our mutual understanding, that this paper is offered for consideration.

Almost from the first day of college life the beginner considers anatomy an uninteresting subject—dry, not easy to master—and is therefore overwhelmed by the magnitude of the task before him and despairs of ever becoming more or less familiar with its details.

Right here I wish to put myself on record by stating that in a good many of our medical schools, even in some that are considered the best, the teaching of gross anatomy is, to my firm belief, in a measure improperly conducted.

Realizing, however, the exactness and importance of the subject, it behooves the teacher as well as the school to afford the student every possible facility for the proper acquisition of a necessary working knowledge on that subject.

It is hardly possible in a paper of this magnitude to point out and discuss every region of the human anatomy which I consider erroneously interpreted, hence the most frequent and perhaps most important ones will claim our attention.

Beginning with the first step in gross anatomy, the student is told of muscles, and he is instructed to study lists of muscles under the different heads of flexors, extensors, supinators, adductors, etc. But how are these lists obtained? Usually from the anatomical method, which consists in dissecting out a muscle on the dead body, freeing it from its connections, but leaving it attached at its origin and insertion. The muscle is then pulled upon by the dissector, and the resultant position of the limb is taken to be the action which the muscle would exercise during life. Or a muscle is seen to have a certain origin and insertion, so that if it contracted it must produce approximation of the two parts. As an illustration of this may be mentioned the Latissimus Dorsi, which from its origin from the lowest three or four ribs and its insertion into the humerus has been looked upon as a muscle of forced inspiration, for it was concluded that if, when the humerus was fixed, the muscle contracted, its only action would be to elevate the ribs.

The student assumes this for granted, and remains contented with such conclusion, as though it were possible for this particular muscle to act by itself.

I am convinced there is no instance in the human body of a movement in which only one muscle takes part, and it would therefore be necessary to know, first, the particular share of the other muscles in the movement, and the manner in which they affect the action of the muscle under consideration.

Because a certain movement can be produced on a joint by traction on the dissected muscle, it does not follow that the muscle must necessarily be used during life for this purpose. I venture to think, however, that although every movement that any given muscle is capable of is undoubtedly produced, yet, as the muscle acts alone, we do not know what the influence of the other muscles may be which also enter into the movement, and also that we do not know whether a muscle which on stimulation gives the movement,—let us say flexion,—is included in the movement of flexion when this is performed as a voluntary act. Such instances in the human body are too numerous to require any further deliberation.

That such are the explanations given to the student by the majority of teachers of anatomy is well known, and, as my objections are based on scientific investigations, I therefore firmly maintain that this part of gross anatomy is erroneously interpreted and imparted to the student. I venture to think that if all the muscles contained in some of these lists contracted, the movement produced would not be the one which was expected, because such lists do not express a combination which has been verified by actual inspection during life.

Even as far back as the eighteenth century the great Winslow remarked: "The experiments made

* Read before the Chicago Anatomical Society at the regular monthly meeting of December, 1910.

on dead bodies by pulling the muscles after they have been raised are very, very fallacious."

And W. W. Keen in one of his addresses in 1887 remarks: "What I wish, therefore, formally to urge upon teachers of anatomy is not that the living model should be used occasionally, but regularly; not as a rarity, but as a constant means of illustrations as much as the cadaver or skeleton."

I sincerely trust that the time will come when the actions of muscles will be taught on the living subject, together with the part which they take in the performance of at least simple movements. The subject of muscular movements alone claimed my attention for the last few years, and I hope in future to be able to show that the actions which are ascribed to some of the muscles, and are so taught to the student, can not be substantiated when put to the true test in the living subject.

In his further anatomical studies the student is told of canals, rings, openings, cavities, etc., etc., in the human body. After a careful search of most anatomical text-books usually employed in our modern schools, only very few make mention of the fact that canals, openings and cavities are in reality, i. e., in the living, not existing. In other words, they are potential. Taking, for instance, the so-called inguinal canal. It is stated that it comprises the space between the external and internal abdominal "rings," as though there were actually such rings, and about half an inch above Poupart's ligament.

Let us examine the veracity of this statement.

Canal is derived from the Latin, Canalis, meaning a channel, trench, conduit, a pipe, if you please, and by these definitions is usually understood a structure of any shape and length, composed of certain material having at least two extremities, whose function it is to contain or convey fluids or solids through its interior, and hence of necessity communicating with two distinct sources.

Is the so-called inguinal canal in reality a channel, a pipe? Is it a structure at all? Does it communicate with the abdominal and scrotal cavities? I venture to think that if it did, every one of us would suffer from hernia in some form, sooner or later.

Assuming, as I do not assume, that it is a canal, what tissue constitutes its walls? Because the spermatic cord is situated between the muscles forming the abdominal wall, that does not entitle the space occupied by the cord to be named canal. We might as well state that the humerus is situated in a canal, because it, too, is surrounded by muscles forming the arm. Or a certain blood vessel, or nerve, passing through a muscle are also situated in canals.

Text-books, as well as teachers of anatomy, with few exceptions, hardly make mention of this fact, and hence the student in his dissections invariably searches for hours in vain for the so-called inguinal canal. As to the external and internal abdominal rings, this is too apparent to every teacher of anatomy that no such thing is in existence, and hence does not necessitate any elaboration. Suffice it, however, to state that no anatomist, to say nothing of the surgeon, can demonstrate efficiently the so-called abdominal rings in the normal human body. It is only in consequence of malinterpretation of the embryology of the descent of the testicle from the abdominal region into the scrotum that such statements are still circulated and adhered to, principally by those whose anatomical knowledge is not based on repeated dissections. Even in the most extensive and complete inguinal herniæ, direct or indirect, the so-called abdominal rings cannot be demonstrated, and the ill-informed surgeon as well as the inexperienced dissector simply create such rings. I made particular investigations in order to corroborate my statement that, with the exception of very few, the average surgeon of to-day does not possess any more than superficial book knowledge in anatomy and a good many very little at that. Seldom do we see a surgeon to-day in the dissecting laboratories for anatomical investigations; hence he adheres to his meager student-day conceptions of anatomy, which enable him only to convey the same misconceptions to his audience.

Erroneous, unfounded anticipation and fear of conveying infection from the dissecting laboratory to the operating room or hospital ward is accepted, in part at least, as sufficient excuse for the surgeon, or even general practitioner, to abstain from the fountain of truth. Properly and scientifically prepared dissecting material of to-day is absolutely inert and may be handled by the most careful surgeon with absolute impunity. I have repeatedly demonstrated this truth to surgeons of wide reputation while teaching at the University of Illinois. How often do we hear to-day of dissecting room infections? In the anatomical laboratory of the University of Illinois for the last twelve years not a single infection was recorded, notwithstanding the fact that students at their laboratory exercises, accidentally or carelessly, receive injuries almost daily, and I am convinced that the same results are obtained in all other well-regulated, modern anatomical laboratories.

In the abdominal region the student is told of a greater and lesser peritoneal cavities, and of abdominal organs being intra and extra peritoneal.

Embryologically the peritoneum is a closed serous sack, and all abdominal organs are formed external to the sack. In consequence of the direction of least resistance, further growth of these organs causes the sack to become indented, and the indentations augmenting proportionally until complete development of the organs is established. In other words, the organs augment in size in a direction inward, into the primitive peritoneal sack, and eventually, when the organs attain the stage of complete development, the abdomen is filled very snugly indeed; so much so that normally at no time can there be found any unoccupied space whatever, unless through a malformation or malposition of an organ in process of development, or in consequence of a subsequent pathological lesion, crowding out, as it were, some organ or organs from their normal position, that a cavity is created.

As stated above, all abdominal organs are developed external of the primitive peritoneal sack, and subsequently through a process of invagination become covered by peritoneum. Since this is true, it follows that it is impossible for any organ to become completely enveloped by peritoneum, or be

situated in the so-called peritoneal cavity. Normally there is no such thing as a peritoneal cavity or intra-peritoneal organ.

Taking, for instance, a loop of small intestine. It is enveloped by peritoneum, but not completely so, since it is attached to the posterior abdominal wall by a mesentery composed necessarily of two layers of peritoneum between which are situated blood vessels, nerves, glands, fat in various quantities and connective tissue. These structures occupy space and therefore prevent the absolute approximation of the two layers of peritoneum, and hence cannot completely envelop the gut. Is it not a fact that if the peritoneal membrane were not so thin, and not so intimately adherent to the organs and parieties, it would be quite possible for one to shell out, as it were, every abdominal organ and inflate again the peritoneal sack to its original shape? If this were possible, it is evident that all abdominal organs would again be found external to the peritoneal sack, proving conclusively that no organ is situated within the sack, and hence cannot be even anticipated intra-peritoneal.

Similar misinterpretations do we find in the so-called plural cavity or sack, in the thorax and conjunctival sack in the orbit of the eye. In both instances the visceral and parietal layers of the respective membranes are so intimately related and so closely approximated that it is impossible, more or less comfortably, or without any difficulty, to introduce into these so-called cavities an object even as thin as tissue paper. Here, too, only when a pathological lesion takes place that a cavity is created in each instance, or on a normal cadaver by a bad dissector. By a cavity we understand a space normal or abnormal not occupied by anything except perhaps air, and that can be filled by fluids or solids as desired. Is there anything in the above mentioned instances corresponding to such a cavity?

In topographical or relational anatomy I find similar misinterpretations. By the relations of an organ or a structure we should include only such organs or structures as are situated in immediate vicinity to the one in question, and if several are so situated, say in front of the one under consideration, it is only that one which is almost in direct contact that we can properly consider in relation to it. As an instance, I will offer the relations of the second and third portions of the subclavian artery. These are situated on the superior surface of the first rib. That the first rib is below and rather at a posterior aspect to the clavicle no one can dispute. Furthermore, to the anterior border of the clavicle the pectoralis major and deltoid muscles are attached and the subclavius beneath the clavicle.

Now the platyzma takes its origin by thin, fibrous bands from the fascia covering the upper part of both pectoralis major and deltoid muscles and its fibers pass over the clavicle obliquely upwards and inwards to be inserted into the subcutaneous tissue of the lower part of the face, blending with the muscles of that region. Since the platyzma is situated in front of the pectoralis major and the subclavian artery on the first rib, it is clear that the vessel is covered not only by this muscle but also by the pectoral fascia, costocoracoid membrane and subclavian muscle. The platyzma is consequently most anterior in the upper pectoral region. How then can the platyzma be considered as a structure in relation with the subclavian artery?

Again, if we interpret this to our students as one of the relations of the subclavian artery, what would be the objection of teaching them also that the umbilicus is in anterior relation to the abdominal aorta? I have examined as many text-books on anatomy as I could possibly obtain, and, with few exceptions, the platyzma is mentioned as one of the relations of the vessel under discussion. I have made careful, repeated dissections of that region, and I have also very carefully investigated the dissections made by my students, and yet fail to see the veracity of that statement. I can only conclude that it is a misinterpretation, unreasonable and confusing to the student.

In my didactic course I invariably point out to my students this as well as all other similar misinterpretations, as I call them. Time and space will not permit me to present in detail all investigations I have made in this respect, but I hope in future to be able to present further results in the field of gross anatomy and I simply offer this paper as an impetus for discussion.

TRANSFUSION IN A CASE OF TYPHOID FEVER.

By RENÉ BINE, M. D., San Francisco.

In his book "Hemorrhage and Transfusion" Crile reports two instances of intestinal hemorrhages complicating typhoid fever where transfusion produced marked improvement. Both patients were remarkably revived, but the hemorrhages recurred and death resulted. Crile has likewise collected ten other cases of typhoid fever with intestinal hemorrhages where transfusion of blood (whole blood 2, defibrinated 4, not stated but probably defibrinated 4) apparently saved five lives. These cases date back to a period of from 1875 to 1886, when direct transfusion was unknown, so that in view of the great rarity of these reports, we feel justified in publishing an account of the following case which presented many interesting features, and in which, we feel, transfusion accomplished all that could be expected of it under the circumstances.

Miss F. C., born 1882, single; nurse.

Family history: M. d. acute t. b. 1885 f. and 4 s. alive and well.

Habits: Irregular hours food. Otherwise negative. Menses regular.

Past history: Pneumonia at 12 years age. Diphtheria, pertussis in childhood. Tonsillitis several times, tonsils removed 1905. Following a period of very hard work in 1908 was quite anemic (Reds 3,100,000 Hg. 70%) and exceedingly nervous, had frequent crying spells, and at this time examination revealed a cardiac murmur (haemic?) and a slight albuminuria, the latter clearing up and the patient gaining in weight under tonic treatment. The patient never returned for examination and except for more or less constipation and spells of nervous exhaustion due to overwork, was free from trouble until this:

Present Illness: Having been on night duty for several weeks and unable to sleep during the day on account of nervousness the patient on December

22, 1910, complained of being "all in," feeling nervous and "weepy" and of a very severe headache. Temperature 99 degrees. By the 24th the temperature had risen to 102 degrees, the area of splenic dullness was distinctly enlarged, rose spots were present, and by the 27th a diazo reaction and a weak Widal reaction were obtained. The patient was in a rather undernourished state, quite nervous and impressed the observer as profoundly toxic.

Course of the Disease: The patient's chief complaint was headache, the pain being so severe as to interfere with her rest and was not relieved by ordinary doses of acetphenetidin. Ice-bags to the head, cold sponges and hexamethylenamine internally were employed to combat the pyrexia and undoubted bacillaemia.

December 25: Temperature ranged from 103 to 104.6, pulse from 104 to 120, respirations 18 to 22. Leucocytes 7800, polys 67%. General chilliness was frequently complained of.

December 26: Temperature 102 to 104.8. Continual nausea, repeated vomiting, frequent chilliness; rectal pains and tenderness partly due to hemorrhoids.

December 27: Temperature 100.8 to 105, pulse 100 to 118. Frequent nausea, chilliness, "feels miserable," headache persists, urine examination negative except for marked diazo.

December 28: Moderately comfortable for a few hours, then chilliness, vomiting twice, considerable nausea, loose bowels and pain in right upper quadrant abdomen. This region is tender, there is marked rigidity, and a definite resistance to palpation. Temperature 101 to 104.6.

December 29: Temperature 101.6 to 104.8. Very restless and nervous. Headache persists. Late in day, nose bleed. Urine as on 27th. Still has abdominal pain.

December 30: Temperature 101.2 to 104. Nausea, vomiting, constipation and distention relieved by 15 cc. castor oil.

December 31: Severe headache and moderate backache persist. Sponges fatigue patient greatly. Nausea present. Abdomen still painful and tender. Gall-bladder can be distinctly felt, descending apparently about 1" below liver, which is quite enlarged. In order to reduce temperature and combat headache, pyramidon prescribed, 10 cc. of a 2% solution every 2 hours. Temperature 101 to 103.4.

January 1st: Gas pains have bothered patient from onset of trouble. Has been subject to them before this illness, as well as to pains in rectum, which are only relieved by low cold water enemas. Vomiting and nausea. 4 p. m. about 120 cc. liquid stool highly colored with blood. 8 p. m., coffee-ground vomitus giving positive reaction to all blood tests. Temperature fell to 100° after bowel hemorrhage but did not rise above 101.2 during remainder of day.

January 2nd: Temp. 100.4 to 103.4. Pulse 100 to 130. Leucocytes 7200. Polys 85%. Cholecystitis still persists. Severe pain in rectum; low cold water enemas insisted on by patient, return highly colored with blood. Urine contains much albumin, many hyaline, granular and epithelial casts, but no blood.

January 3: Temp. 100 to 101.2. Patient getting weaker and is unable to retain but a very small amount of ingested liquids. Headache less since taking pyramidon. Vomited blood; low enema returned bloody.

January 4: Still blood per rectum. Turpentine stupes. Patient quite weak. Vomiting of blood, bright red, also bright red blood in stools and epistaxis. Gums have shown decided tendency to bleed from onset of illness. Temp. 100.2 to 102.2.

January 5: Rectal examination (digital and with proctoscope just inside sphincter) fails to show any source of bleeding. This examination was undertaken to determine if hemorrhoids were responsible for blood in stools. Gelatine fed patient. Pyramidon discontinued in view of a possible influence on hemorrhagic tendency, and hexamethylenamine gr. v. every four hours prescribed. Temp. 101 to 102.6. Pulse 100 to 110. Resp. 20 to 24. Widal quite marked.

January 6: Menses present. 11 a. m. Large bowel movement of almost pure blood; pulse weak, 124. 11:20 a. m. Small bloody stool. Two stools together equal about 500 cc. Morphine hypodermically; coil to abdomen. 3 p. m. severe chill. 6:45 p. m. coffee-ground vomitus. Leucocytes 7000, polys. 60%. Hemoglobin 70%. Calcium chloride enemas. Temp. 103.2 to 103.8. Pulse 112 to 124.

January 7: Temp. 102.4 to 103.6. Less nausea, able retain moderate amount liquid nourishment. Chilly and quite nervous during day. Sleep about 6 hours in 24.

January 8: Ice-coil to abdomen has been repeatedly employed but poorly tolerated, generally producing marked chilliness. Several chills to-day and repeated vomiting. Temp. 103.4 to 104.6. Pulse 104 to 120.

January 9: Temp. 103.8 to 104.4. Complains of nervousness. Two chills during day, one quite strong.

January 10: Chilliness. 8 a. m. Bowel movement; apparently large proportion bright red blood mixed with many small clots and small amount urine; total measured 600 cc. Morphine hypo. 8:20 a. m. 15 cc. pure blood per rectum. Temp. 103.4. Pulse 118. Resp. 24. Calcium Chloride enema. Gelatins. Complains of queer sensation about heart; pulse rapid but fair quality. 12 m. temp. 101.8. Pulse 124. Resp 22. 12:20 p. m. vomited 12:30 p. m. large bowel hemorrhage. Morphin hypo. Adrenalin m x hypo. Adrenalin enema. 3:30 p. m. medium large hemorrhage. Pulse 150. Morphin and adrenalin hypo. 4:20 p. m. Large bowel homorrhage. 5:20 p. m. Temp. 100.9. Pulse 146. Quite weak. 6 p. m. pulse 160. Patient's condition appears desperate. For days she has retained practically nothing but liquids. Is now exceedingly weak, pulse barely palpable, rapid, thready, and the usually pale face appears ghastly white and old, the features drawn. Red blood cells 2,072,000. Hemoglobin 35%, leucocytes 7100.

The patient's condition certainly seemed hopeless. The homorrhages were far greater than one could expect with an ordinary typhoid. Gastric hemorrhages as well as the early epistaxis and bleeding gums pointed to a general septic condition, though ulcers in the stomach could not be definitely ruled out.

It was decided to do a transfusion immediately. It was naturally impossible to carry out hemolytic tests with prospective donors, nor could time be lost in searching for a person who had previously had typhoid, to act as donor. A nurse was found who volunteered to make the sacrifice on ten minutes notice, and at 7:10 p. m. the patient was taken to the operating room, where Wallace I. Terry and Sterling Bunnell carried out the direct method of transfusion.

The result was soon noticeable; the patient's pulse became fuller, the great anxiety and dyspnoea slightly lessened and the pearly conjunctiva assumed a better color and the wrinkles about the mouth became less apparent. But while the transfusion was still progressing, matters again seemed to take a turn for the worse, so that at this time it was assumed that another hemorrhage was taking place.

The blood count before the transfusion was 2,00[illegible]-200 with 35% hemoglobin; 2,340,000 with 40% hemoglobin after the transfusion. The patient suffered a severe chill as soon as she was returned to her bed from the operating room. Pulse 140. Resp. 28. Temp. 104.8 (rectal).

January 11: At 1:15 a. m. large bowel hemorrhage. 1:30 a. m. vomited. Vomiting of all nourishment and liquids during entire day. Headache. Temp. range 97.8 to 99 (rectal). Pulse 104 to 114. Resp. 18 to 22. Urine contained large amount of albumin but no blood. Diazo still present.

January 12: Difficulty in breathing, only in part due to abdominal distention, but while of sighing type, no increase in rate, not relieved by oxygen inhalation. Vomited 14 times in 24 hours. Temp. 97 to 100 (rectal). Pulse 102-14. Resp. 18 to 20. Urine 250 cc.

January 13: Ringer's solution subcutaneously, and salt solution per rectum. Vomited 3 times. Only 100 cc. urine, this per catheter. Patient decidedly weaker. Temp. 98.4 to 99.4 (rectal). Pulse 100 to 108. Resp. 15-20.

January 14: Nutrient enemas. Nausea and vomiting persist. Temp. 98.2 to 98.4 (rectal). Pulse 94-104. Urine 150 cc. (catheter). One enema was returned with some old clotted blood.

January 15: Temp. 98.2 to 98.6 (rectal). Pulse 96 to 104. Urine 120 cc. (catheter). Vomiting persistent.

January 16: Very weak. Temp. 97.2 to 97.4 (rectal). Urine 125 cc. (catheter). At times seems to be in stupor.

January 17: Temp. 96.6 to 97 (rectal). Pulse 92 to 96. Resp. 16 to 22. Urine 270 cc. (catheter). Parotid glands are tender and a trifle enlarged.

January 18: Quite weak and exhausted. Temp. 96.6 to 98 (rectal). Urine 150 cc. (catheter). During last 2 days, whatever patient desired was given her, steak to chew, custard, etc., but within a half hour it was always vomited. Has spells of difficult breathing. Parotid glands are very tender and palpably swollen.

January 19: Temp. 96. Pulse 120. Resp. 30-40. Constant difficult breathing unrelieved by oxygen inhalations. Pain around heart complained of. Leucocytes 24,000.

During the last few days a mass had been felt in the right flank further down than the gall-bladder, which has decreased gradually in size. It seemed too large for kidney, and in view of a possible perirenal abscess (pyo-nephritis practically excluded by absence of albuminuria, this having disappeared a few days ago, and by absence of renal elements in sediment, the pus cells being easily explainable by a moderate degree of cystitis; sediment showed presence of bacilli, culturally typhoid), needles were inserted in flank but without finding pus, this under nitrous oxide anesthesia with patient in her own bed. After this, slept at short intervals, waking up to complain of inability to get breath. Morphin relieved this distress, and becoming gradually weaker, conscious practically to the very end, patient died on January 20 at about 7:30 a. m.

The body having been embalmed very soon after death, it was possible to perform but an incomplete and somewhat unsatisfactory autopsy. The abdomen only was opened. The embalmer's needle had punctured the gall bladder to such an extent as to warrant no deductions as to size. The gastric mucosa was injected in a few spots, was for the most part hyperaemic, but no ulcerations were seen. The intestine showed typical typhoid ulcers in the ileo-caecal region, most of them in process of healing.

Large masses of blood clot occupied the lumen of the bowel in this neighborhood, much of which must have been from recent hemorrhage. The kidneys were of the large white variety, (parenchymatous nephritis), the right one reaching down to the anterior superior spine. It measured 14 by 6½ by 4½ cms., the left one 12 by 6 by 5 cms.

We can but feel that the transfusion accomplished something, in fact far more than the blood counts indicated, for the patient no doubt had a hemorrhage while on the operating table, and this helped to lower the post-operative count. We believe that without the transfusion death would have occurred on January 10th instead of ten days later. The remarkable feature of the case was the fact that, following the transfusion, the patient's temperature never went beyond the normal, although on the ninth it had been up to 104.4 (rectal). This cannot be attributed to shock nor to the anemia, for almost up to the last, the pulse was of such character as to exclude these possibilities.

We are of the opinion that the patient's chronic parenchymatous nephritis had much to do with her hemorrhagic tendency; that the latter was aggravated by her severe typhoid; that both combined, but principally the former were responsible for the persistent vomiting. It is curious enough that the albuminuria diminished a few days after the transfusion.

Should we ever again be called upon to treat a severe case of typhoid complicated by a hemorrhagic tendency, we would if possible procure a donor immune to typhoid, and whose serum, tested for hemolysins and iso-agglutinins, was proved devoid of danger to the patient.

HOSPITAL DEPARTMENT — SAN FRANCISCO HOSPITALS.

By WM. R. DORR, M. D., San Francisco.

Perhaps no other city in history and certainly no other modern city has had more incentive to construct and put in running order a large number of hospitals than San Francisco has had during the last five years, and I am sure that no community could have responded more loyally to the need than has been done during this more or less trying period.

In the spring of 1906 San Francisco had about forty hospitals, of which very few could be described as thoroughly modern and up to date.

Private Hospitals.

	No.	Beds.
Hospitals for special classes of cases, using mostly remodeled buildings	7	152
General hospitals using old buildings or buildings not originally intended for hospital purposes	8	500
General hospitals using modern buildings built for hospital purposes but over five years old	4	600
General hospitals having buildings constructed for hospital purposes during the last five years	11	1180
	30	2432

Municipal Hospitals.

	No.	Beds.
Emergency Hospitals	5	49
Detention Hospital	1	8
Smallpox and Leper Hospitals	2	70
General Hospital	1	350
General Hospital (in process of construction)	1	510
Tubercular Hospital (planned)	1	260
Infectious Hospital (planned)	1	100
	12	1347

This gives a grand total of 3779 beds or one bed to about every 110 inhabitants.

After the great conflagration only four hospitals

remained that were housed in modern buildings built for hospital purposes and few of the old structures remained, so that hospital authorities were pushed to the utmost to provide temporary makeshifts to fill the need for hospital treatment.

It was not long, however, before plans were being adequately made to fill the need, so that to-day we have a large number of hospitals, all of which are modern and up to date in every way, that have been built for hospital purposes and have all been completed or started during the last five years.

The following table shows a rough classification of the present hospitals of this city, but does not include those maintained by the Federal Government.

The following hospitals, examples of up-to-date general hospitals designed for private cases, have all been completed during the last five years or are in the process of construction.

These eleven hospitals show quite a variety of architecture, general plan and type of construction.

The Adler Sanatorium, offering accommodations for 55 patients, has its exterior finish in the Spanish style and is constructed throughout of reinforced concrete and in general shape like the letter L.

The McNutt Hospital, with 110 beds, located in a commanding position on the side of one of the highest hills of the city, is also constructed entirely of concrete.

The Southern Pacific Hospital, with 200 beds, is a magnificent example of what can be accomplished when one man is permitted to express his ideals of hospital construction and is not tied down by considerations of cost. This has been built with steel frame and brick exterior walls finished in the Renaissance style. Its general shape is that of an expanded letter H.

The Children's Hospital has just completed the main part of its new building, which has about 40 beds, and has started the construction of a building to care for about 20 contagious cases. The main building will be the shape of the letter U, and has been built with steel frame and exterior brick walls in the Italian style of architecture.

St. Mary's Hospital, with 100 beds, is so planned that more wings can be easily added, which will more than double its present capacity. The framework is steel with reinforced concrete walls and the exterior finish is in the Spanish style.

The St. Francis Hospital, accommodating 100 patients, is built with steel frame and brick exterior walls. It is extremely compact in appearance and is finished in the Renaissance style.

St. Luke's Hospital, now in process of construction, will have 150 beds, the frame being reinforced concrete and the exterior walls brick. The general shape might be described as a number of U's joined together to make one building and the architecture Gothic.

The German Hospital, with 220 beds, has been constructed with steel frame and brick walls. Its general shape is that of an expanded letter H. It is located on the side of a hill commanding an extensive view of the city.

Mt. Zion Hospital, now in process of construction, will have 125 beds and will be constructed with reinforced concrete frame and brick walls. It will be finished in the Renaissance style.

St. Winifred Sanatorium, with 50 beds, has been constructed of reinforced concrete and brick.

The Memorial Sanatorium, with 20 beds, is built with steel frame and brick exterior walls and is finished in the Renaissance style.

At the same time that private corporations and individuals have been busy providing for patients, the municipal authorities have likewise, after years of inadequate provision, finally adopted a comprehensive scheme for the municipal hospital service and are gradually getting the different parts in operation.

First, a reinforced concrete building to hold 350 patients has been built on the Almshouse Tract, which is intended ultimately for chronic cases, but at present is being used for acute cases. This building is in every way modern and well adapted for the purpose for which it was originally intended.

Second, the old hospital at Twenty-second and Potrero streets, which had stood for about forty years, was demolished, and in its place has arisen a most magnificent group of buildings which when completed will accommodate 510 general medical and surgical cases, with complete emergency department, pathological laboratories and everything necessary to provide a complete municipal teaching hospital.

Back of this main group of buildings the plans call for a group of buildings for the accommodation of 260 tubercular cases and another group for 100 infectious cases. At present shacks similar to those suggested by the National Association for the Study and Prevention of Tuberculosis have been erected on part of this property and are housing the city's tubercular cases in a very satisfactory manner.

The former Smallpox Hospital, for years a disgrace to the community, has been completely remodeled and practically reconstructed so that smallpox cases, which are always found more or less frequently in every seaport, are now properly provided for.

Likewise the quarters for San Francisco's leper colony, numbering about 16, have been entirely remodeled.

It can thus be seen that the city government is in no way behind the standard set by private individuals in providing hospital accommodations for our increasing population.

From the foregoing it would seem that San Francisco will soon be not only well supplied with municipal hospitals, but also extremely well provided with private institutions of all descriptions. This shows that hospital authorities are fully alive to the fact that during the construction of the Panama-Pacific Exposition and during the time that it is opened, combined with the opening of the Panama Canal, there will be a very great demand for hospital accommodations and show their confidence in the increased growth of this, the main seaport of the Pacific Coast.

The detailing of the different interior arrangements of these hospitals, the devices for the comfort and proper care of the patients, the various systems adopted for handling the distribution and service of

meals, the arrangement of operating rooms, the methods of handling stores and the methods of keeping records, would take a volume to be given in detail.

Each one of the private general hospitals is intended to handle practically the same class of cases and to give them the best possible medical and surgical treatment and also the same attention as is accorded guests in a first-class modern hotel. Besides this, each has undoubtedly striven as much as possible to minimize the cost of administration, service and general upkeep, in order to be able to care for patients at the lowest cost for the service given.

Despite the fact that all are striving toward the same goals—efficiency and economy—still no two are attempting to reach these in the same way. Take, for instance, the prime department in a hospital outside of the strictly medical and surgical care, i. e., the culinary department. This department is handled in as many different ways as there are hospitals, with more or less success. The essentials in this are (1) having the food cooked, (2) putting it on a tray and (3) getting it to the patients in a palatable and edible condition. These are the same in all hospitals, and yet each hospital does this or attempts to do it in a different way. Despite the fact that most patients develop into "cranks" relative to their food, we nevertheless must admit that they frequently have just grounds for complaint along this line.

The above statement relative to the different ways of handling food may be taken as a fair example of the variety of methods of handling situations found in all departments of our hospitals and goes very clearly to show the need of association and the interchange of ideas among hospital workers, so that some day the perfect hospital may be built and built where it should be built—in the West.

PERMANENT SUPRAPUBIC DRAINAGE OF THE BLADDER WITHOUT LEAKAGE—DEMONSTRATION OF A CASE.*

By HENRY MEYER, M. D., San Francisco.

While it is very seldom that one is called upon to perform permanent drainage of the bladder, it must be admitted that we occasionally meet with a pathologic condition requiring such treatment. It is not my intention to discuss the class of cases requiring such an operation, or to describe any of the appliances which have been devised for drainage of the bladder, but to present a simple apparatus which has permitted the urine to flow out of the bladder of my patient, and at the same time allowed the patient to remain absolutely dry. I wish to say here that before this apparatus was perfected, the patient was just as wet and uncomfortable as most other suprapubic drainers.

In order to accomplish a good result, we must employ:

First, a tube extending from the skin to the interior of the bladder.

Second, a shield to prevent this tube from being forced out, and to assist in keeping the tube in one position.

Third, a piece of tubing, which connects the bladder tube with a rubber urinal, which is attached to the patient's leg.

Fourth, a narrow band which goes around the body, which keeps the drainage-tube and shield in place.

Each of the articles mentioned, i. e., the tube, shield, connecting tubing and abdominal band, require special description, so that when used as a unit it will accomplish the purpose for which it was intended.

The tube extending from the exterior of the body to the interior of the bladder. This must be rigid, and I would advise that it be made of silver or gold, three-eighths of an inch in diameter, with the bladder or distal end closed to prevent the bladder mucosa from being forced into it when the bladder contracts. It is most important that the tube should be so constructed that the part of the tube which lies within the bladder should be perforated with many small openings, except its distal end. That part of the tube which is not perforated, i. e., the part extending from the skin to the first line of perforations, will vary in length according to the thickness of the tissues between the skin and bladder. Either of these parts, i, e., the perforated or the unperforated part, may be made longer or shorter or curved as the individual case requires, but the above-mentioned principles must be maintained, i. e., the part within the bladder must be perforated with many small openings up to the point of entrance of the tube into the bladder cavity, and the remaining part of the tube, extending from bladder cavity to skin, must not be perforated; otherwise the tissues gripping it will crowd into the perforations and make it difficult and painful to remove, which should be done once daily in order to cleanse the same. The reason for making the perforations small is to prevent the bladder mucosa from being forced into them, while the small openings are no hindrance to the escape of the urine.

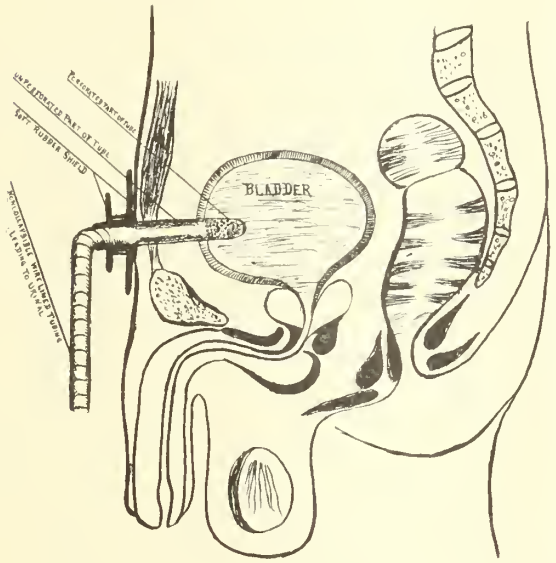
I would also advise that this perforated portion be only long enough to extend a short distance into the bladder, then the patient does not suffer from irritation of the bladder as a result of the presence of the tube. If this part of the tube is unnecessarily long, it stands to reason that it will rub and irritate the bladder so that the patient can not tolerate it. If we wish to construct such a tube, it is very easy to determine how much of the tube (which is unperforated) should lie between the skin and bladder with a Pezzer catheter, by inserting the same through the fistula into the bladder and measuring the distance to the skin.

Then, to insure its exact position when inserted, a narrow metal collar one-eighth of an inch wide is shrunk on to the tube, and this collar comes against the skin when the tube is inserted into the bladder. Thus it will be seen that the tube must be made to order for each case.

The most important point, then, is that the part of the tube lying within the bladder cavity to a point near its distal end should be well perforated;

* Read before the Section on Urology of the San Francisco County Medical Society, Oct. 31, 1911.

this permits the urine to enter the tube from all sides without resistance. If the tube is not perforated up to the point of its entrance into the bladder, then when the bladder contracts the urine is forced not only into the tube but around it, along its non-perforated walls, and leakage is inevitable. So long as there is no resistance to the passage of urine through the tube, the abdominal muscles and bladder musculature prevents leakage by hugging the tube; but just so soon as there is resistance to the passage of urine into the tube, the urine is forced along the outer wall of the tube in spite of muscular



action and that is the reason why the tube must be perforated up to the very point of its entrance into the bladder.

The Shield. The shield is constructed entirely of soft rubber, consisting of two flat rounded pieces of soft rubber one-quarter of an inch apart but connected by a soft piece of tubing, thereby making a unit of the same. This is slipped over that part of the metal tube which projects outside of the body so that the larger flat piece rests against the skin. This larger flat piece is one and three-quarter inches in diameter. The smaller flat piece is one and one-quarter inches in diameter. It is very important that this shield should be made of soft rubber as it permits the patient to move about in any direction, or to assume any position without shifting the tube about, because it conforms to any shape the body may assume without influencing the position of the metal tube.

With the use of a metal shield, the movements of the body invariably change the position of the tube, causing it to be shifted from side to side or upwards or downwards, thereby permitting the urine to run all over the patient every time he makes any muscular efforts or bends forward, backward or sideways.

The tube connecting the bladder tube with the rubber urinal. This tube must be so constructed that it is flexible and non-collapsible; so that it can not be compressed by the patient, regardless of the position he assumes; because as soon as this tube is compressed, the urine can not flow through it, and it is immediately forced out of the bladder, along the walls of the bladder tube.

To obviate this, the patient has a tube made of rubber, but incorporated in this rubber tube throughout its entire length is a spiral of German silver wire, which allows the tube to maintain its lumen under all conditions. This wire lined tubing fits into the open external end of the metal drainage tube and held in with a short piece of pure rubber tubing which is put around the outside of the projecting metal tube and lapping over on to the wire lined tube.

The band around the body. This is a narrow band two inches wide which fits around the body, and so constructed that it presses the larger flat piece of the soft rubber shield against the skin, keeping the whole apparatus in place.

There is also one narrow flat elastic band which connects with the band around the body, in front and in back, running between the thighs; this keeps the abdominal band from slipping up.

The patient. The patient is now 61 years of age; his trouble commenced about 35 years ago, during which period he suffered from painful and frequent urination of varying degrees of intensity and at times his suffering was so severe as to require large doses of morphin to relieve him. He wore a urinal for 15 years.

He came under my observation October 19th, 1908, suffering from painful and very frequent urination day and night. The urine was always very turbid, but this turbidity was due particularly to the presence of phosphates in large quantities. The urine was always highly alkaline in reaction. There was always a trace of albumin, due to the presence of a small quantity of pus, which was always present.

The urinary sediment contained bladder epithelia, phosphates, pus cells. No tubercle bacilli were found; no blood.

Cystoscopy was done under spinal anesthesia, with a small amount of fluid in the bladder, eighty-five cubic centimeters, as the bladder was very much contracted. The mucosa was uniformly inflamed and the bladder showed great trabeculation. The existence of tumor or calculus could be positively excluded by this examination.

Prostate showed no enlargement within the bladder, and by rectum revealed no enlargement.

His bladder capacity was one and one-half ounces and of this amount one ounce residual was invariably present.

Diagnosis: Contracted bladder resulting from prolonged phosphaturia. Diet, internal medication and bladder irrigations were tried by many, including myself, but gave no relief. Patient had been treated by many competent men here and elsewhere for phosphaturia for many years without success. Gradual dilatation of the bladder was tried by several, also without success.

The patient's condition was so distressing, and he was such an extreme sufferer that I offered him a suprapubic cystotomy, explaining the possibility of resorting to permanent drainage, which he most gladly accepted.

Operation: Suprapubic cystotomy was done November 3rd, 1908. The bladder was found to be about three-quarters of an inch thick and it was very evident that his one ounce of residual urine was due to the great thickness of the bladder wall, which could not contract sufficiently to allow its walls to come together. There was no obstruction.

A large rubber drainage tube was placed in the bladder through the suprapubic opening and the same allowed to drain. The tube was removed on the fourth day and the opening gradually contracted until it became small enough for a tube the size of the present suprapubic drainage tube to enter, and since that time, November 3rd, 1908, the patient has been a suprapubic drainer; but not without its great discomforts in the beginning.

Various appliances and drainage tubes were tried, and while urine came through all of them, just as much came around the tube, and the patient was always wet, at times very wet; and the appliance which I demonstrated to you was gradually evolved, piece by piece, so that this patient has been absolutely dry for one and one-half years and he is free from pain and discomfort, and gets about as well as any other man.

Discussion.

Dr. R. L. Rigdon: I can add nothing of importance to the discussion as I have had no experience with such a drainage apparatus. Some years ago I operated upon a patient for prostatic hypertrophy, and following the operation a permanent suprapubic fistula remained. The prostatic obstruction was not entirely removed and the patient is compelled to rely upon catheterization of his bladder through the suprapubic fistula. He can retain his urine without leakage for 5-6 hours and then by introducing a catheter through the wound the urine can be withdrawn and the patient is perfectly comfortable. There is no leakage unless he neglects to introduce his catheter. In this patient no form of urinal is necessary since he has practical control of his bladder.

Dr. Julius Rosenstirn: I have very little to add to this discussion. The imperative demand for relief in Dr. Meyer's case, strictly indicated this kind of treatment. It was not possible to use catheterization on account of the necessary frequency and its consequent painfulness; the bladder being so very small and sensitive, with no possibility or prospect of gradually increasing its capacity.

This device is most creditable to both the doctor and his patient, with whose help it was devised. In cases demanding similar therapeutic measures, Dr. Meyer's instrument should be applied as one giving relief in this, fortunately, very rare and most tormenting combination of diseases.

Dr. J. C. Spencer: I wish to express my admiration of the ingenuity demonstrated by relieving so distressing a condition. In this case necessity was the mother of invention. I had the good fortune to see this apparatus before this evening and was struck by its simplicity and effectiveness. If there is any condition that is distressing not only to the patient but also to the doctor, it is a leaky suprapubic opening. If this new device for giving relief to patients requiring a suprapubic drainage apparatus is a success it marks a step in the advance of the treatment of this condition.

Dr. Henry Meyer: In answer to the questions which Dr. Rigdon has asked, the capacity of the bladder has not increased. The bladder capacity cannot be increased because the patient has such a thick bladder and it is practically always empty. This tube might be valuable to relieve a patient who had been operated upon for malignant disease in the bladder, or inoperable carcinoma with frequent urination, tenesmus, etc. Something of this kind might answer for giving relief while the patient is still alive.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of November the following meetings were held:

Combined meeting of the Medical and Surgical Sections, Nov. 7, 1911.

I. Demonstrations. (a) A case of Polycythemia. W. C. Voorsanger. Discussed by Drs. Abrahamson, Kreutzman, Power and Voorsanger. (Published elsewhere in this issue.)

(b) Extraordinary Temperatures. Milton B. Lennon. Discussed by Dr. Clarence Quinan. (Published elsewhere in this issue.)

(c) Rat Leprosy. G. W. McCoy.

II. The Legal Responsibility of the Physician. A. A. D'Ancona. Discussed by Drs. Welty, Kruetzman, Lartigau and D'Ancona.

General Section, Nov. 14th, 1911.

I. A Plea for the Earlier Radical Surgical Treatment of Gastric Ulcer. H. B. A. Kugeler. Discussed by Drs. Alvarez, Ryfkogel, Allen, Castle, Kugeler. (Published elsewhere in this issue.)

II. Some Blood Pressure Observations on Patients with Relaxed Abdominal Musculature. F. W. Birtch and T. G. Inman.

Eye, Ear, Nose and Throat Section, Nov. 28th, 1911.

I. Demonstration of a Case of Mastoiditis. Henry Horn.

II. Lantern Slide Demonstration of Histology and Pathology of the Semicircular Canals. Henry Horn.

SAN FRANCISCO COUNTY.

Board of Directors elected December 12th, 1911: Rene Bine, W. W. Kerr, H. B. A. Kugeler, H. E. Alderson, H. C. Moffitt, W. I. Terry, M. R. Gibbons, G. E. Caglieri, G. E. Ebright, J. C. Spencer, P. M. Jones, A. A. O'Neill, G. B. Somers, F. D. Tait, H. W. Allen, C. G. Kenyon, J. B. Frankenheimer, M. B. Lennon, C. F. Welty, H. D'A. Power, T. D. Maher.

OFFICERS ELECTED DECEMBER 18, 1911.

President, Dudley Tait; 1st Vice-President, Harry E. Alderson; 2nd Vice-President, Morton Gibbons; Secretary, René Bine; Librarian, Leo Eloesser.

SAN DIEGO COUNTY.

A certified dairy has been opened in San Diego. A municipal laboratory has been established for the handling of all bacteriological work, testing of milk, tuberculin and mallein tests of cattle, etc. Dr. H. A. Thompson has been placed in charge.

A city ordinance has been passed licensing dairies and distributers of milk. The proceeds, amounting to about $800.00 per year, are to be applied to the health fund of the city.

B. J. O'NEILL, Secretary.

SAN LUIS OBISPO COUNTY.

At a meeting of the County Society held December 2nd, the following officers were elected. Dr. H. S. Walters, president; Dr. C. J. McGovern, vice-president, and Dr. W. M. Stover, secretary-treasurer. The meetings of the society are now held on the first Saturday of each month. Considerable interest is awakening in the society work and it is hoped that before the end of the year every man in active practice in the county will be a member of the society.

CALIFORNIA ACADEMY OF MEDICINE.

The regular meeting of the California Aeademy of Medieine was held on Monday evening, November 27, 1911, in the library of the San Franeisco County Medical Society. The following seientifie program was presented:

1. A Report of a Case of Raynaud's Disease. W. W. Kerr. Discussed by Drs. Sehmitt, Eloesser, Terry, Twitehell, MeClenahan, Kerr.
2. Multiple Papillomata of the Larynx; a Report of Two Cases. E. C. Sewall. Discussed by Drs. Sherman and Sewall.
3. Demonstration of a Speeimen of Salivary Calculus. J. G. Morrissey. Oiscussed by Dr. Sherman.

Dr. W. F. Snow and Dr. E. C. Fleisehner were eleeted to membership.

Refreshments were served at the elose of the program.

COOPER COLLEGE OF SCIENCE.

The Cooper College Seienee Club held its regular monthly meeting on Monday evening, Deeember 4, 1911. The seientifie program was as follows:

1. Demonstration of Cases of Naevi treated by Carbon Dioxid Snow. Dr. G. H. Mize. Diseussed by Drs. Eaves, Stillman, Haas, Mize.
2. Demonstration of Medieal Cases. Dr. W. F. Shaller. Diseussed by Drs. MeClenahan and Shaller.
3. Case of Hookworm Infeetion apparently aequired in San Franeiseo. Dr. W. C. Alvarez.

The following reeommendations made by the Board of Direetors were adopted:

1. That the Cooper College Scienee Club requests the Medieal Department of Stanford University for the same privileges that it has enjoyed from Cooper Medieal College.
2. That the name of the Cooper College Seience Club be ehanged to "The Cooper Clinieal Society."
3. That the form of government and qualifieations for membership remain as heretofore.

At the elose of the meeting refreshments were served.

UNJUSTIFIABLE CRUELTY.

In December, a Dr. Johnson, eonneeted with the Pacifie Wassermann Laboratories, was arrested by Humane Offieer Hennesy for eruelty to an animal, to wit: eutting off a goat's ear in order to seeure blood for laboratory work. The ease was heard before Poliee Judge Shortall, and at the first hearing several doetors were present, among them Dr. Hunsaker and Dr. V. C. Thomas, and some of these gentlemen stated that anestheties were never administered to animals at any eollege or hospital in the eountry. At the seeond hearing, a eertifieate was presented from Dr. A. W. Lee, of the University of California, showing that ether is always used prior to withdrawing blood from the jugular vein of a sheep, and for all similar work. Dr. Dudley Tait testified to the general use of anestheties for sueh work, the effort of the A. M. A. to promulgate all humane treatment of animals in experimental work, and stated that, in his opinion, "nothing will more retard the progress of medieine and its benefits to humanity than the introduetion of eruel methods in animal work." The Judge stated he had eonsulted a distinguished surgeon who expressed the opinion that Wassermann tests were invaluable, but that it would be more eruel to give an animal an anesthetie than merely to eut off its ear! This is eertainly a most eurious opinion. The Judge eomplimented Offieer Hennesy upon his diligenee, but dismissed the case, stating that from the eonflieting testimony he eould not tell whether there had been any eruelty or not. It is just these rare cases, where some one without due regard to the important nature and eonsequences of the work he is doing, is eruel to animals, that furnish the ammunition for the antiviviseetionists. As Dr. Tait justly says, we should be more particular to avoid even the semblanee of cruelty in animal work than in human surgery.

A San Franeiseo paper, under date of Dec. 9th, 1911, printed the following:

"Court Gets Goat's Goat.

"Five physieians and one scientist appeared before Police Judge Shortall yesterday morning to testify whether or not it is eruelty to animals to elip a goat's ear to get blood for experimental purposes.

"Dr. Dudley Tait of St. Francis hospital stood out alone against the others and insisted that an anesthetie ought to be used on the goat. Other physicians insisted that the anesthetie spoiled the experiment. The other physicians were: Dr. Walter Coffee of the Southern Pacific hospital, Dr. Charles Clark, Dr. H. W. Hunsaker, Dr. Verin Thomas. Ineidentally Dr. Tait told the eourt that every hospital in the city was trying to get hold of goats for experimental purposes.

"Edward Johnson, bacteriologist and chemist for the United States government, was on trial for eruelty to animals for elipping the ears of a goat. The eourt dismissed the ease."

DIAGNOSTIC TABLE.

After Hoag's "Health Index of Children."

The "Sage Foundation" has had printed 5000 eopies of this table.

Teaehers should be on the wateh for the following symptom groups. The disorders whieh give rise to them make for meehanieal inefficieneies and eall for medieal attention:

Disorders of Nose, Throat and Ear.

Mouth-breathing, prominent upper teeth, loud breathing, nasal voiee, eatarrh, running nose, frequent eolds, sore throat, offensive breath, eough, blank expression, slow mentality, deafness, poor physieal development, earaehe, diseharge, inattention, poor spelling, wateling of lips, slow progress, headache.

Eye Disorders and Defects.

Sore eyes of any kind, styes, eongested eyes, erossed eye, squinting, headaehe, peeuliar postures when reading, holding book too near face, poor spelling or reading, dizziness.

Teeth Defects.

Deeay of teeth, diseoloration, erooked teeth, prominent teeth, offensive breath, poor artieulation, broken teeth, mal-nutrition.

Contagious Diseases.

Pallor, flushed face, eruptions, seratehing, sleepiness, lassitude, vomiting, headaehe, eough, running nose, congested eyes.

Nervous Disorders.

Inability to hold objeet well, spasmodie movements, twitching of eyes, faee or any part of the body, irritability, fits, bad temper, fainting, nail biting, undue emotion of any sort, frequent requests to "go out," timidity, stammering, eruelty, perverted tastes, moroseness, solitary habits, undue embarassment, undue aetivity, misbehavior, sex perversions.

Nutritional and General Disturbances.

Pallor, emaeiation, enlarged glands in neek, puffiness of faee or eyes, shortness of breath, lassitude, perverted tastes (e. g. foods), slow mentality, peculiar or faulty postures, under development, exeessive fat, vicious personal habits, low endurance power, irritability, disinclination to play, fatigue.

Defects of the Feet.

Walking "pigeon toed," a shuffling, inelastie walk, toeing markedly out, advaneing foot by exaggerated knee aetion, long axes of foot and leg meet at unusually wide angles, shifting from foot to foot, standing on outer edge of feet, loeking knees, leaning against wall or desk, shoes run over at either side, front of heel worn down, outer and baek part of heel worn down, wearing out of soles asymetrieally, eongestion of the feet, swelling, puffiness, exeessive perspiration, eallouses, twiteling of the foot muscles.

Incorrect Posture.

Unequal height of shoulders, standing on sides of feet, prominent abdomen, flat chest, curved back, stooping.

HITCHCOCK LECTURES.

The Hitchcock Lectures in the University of California will be given this year by Dr. Richard M. Pearce, professor of Research Medicine in the University of Pennsylvania. Professor Pearce is well known to all who are interested in the advancement of scientific medicine in America, not only through his own contributions to various subjects connected with bacteriology and pathology, but through the positions which he has held as Professor of Pathology successively in the Albany Medical School, New York University, and the University of Pennsylvania. The chair of Research Medicine which Professor Pearce now holds is unique, but is undoubtedly indicative of the most characteristic tendency of modern medical science, namely, its service in connection with the practical problems which confront the clinician.

Dr. Pearce's lectures will begin on the evening of January 22nd and will be given on successive days, and deal with the following aspects of the history of research in medicine: "Antiquity to 1800—the Efforts of Isolated Investigators"; "The Development of Laboratories for the Medical Sciences"; "Pasteur and the Rise of Bacteriology"; "Present Day Methods and Problems"; "Medical Research in American Universities—Its Present Facilities, Needs and Opportunities."

BOOK REVIEWS

Nostrums and Quackery. Pub. by Jour. of Amer. Med. Ass'n. Chicago, 1911.

Perusing this volume one is impressed with the expediency of every member of the profession giving a copy a prominent place in his waiting room, so that those who wait may read. By this means the public may be imbued with a proper feeling of nausea occasioned by the fakirs who feed on the physical ills of communities. It is a collection mostly of reprints from several medical journals, particularly the Journal of the A. M. A., containing interesting, thorough, and certainly startling exposures of the patent frauds, which burden the eye and insult the intelligence in the advertising media of this country. Of particular local interest is the article on Viavi, reprinted from our State Journal of 1907, in which we see our prominent Law brothers figured in a pitiful and even criminal light.

As a ready book of reference concerning the compositions of the various preparations and the methods of their exploiters, it is a most delightful addition to our shelves. It cannot be too strongly urged that each one of us should know this work well for by that knowledge we can speak, fortified by facts. Read it and own it. H. I. W.

The Origin of Life.* By H. Charlton Bastian, M. D., F. R. S., Emeritus Professor of the Principles and Practice of Medicine, University College, London. G. P. Putnam's Sons, New York and London, 1911.

This treatise embodies a memoir submitted to the Royal Society of London on the Origin of Life question but not considered suitable for acceptance by that body, with the result that the author has produced it in book form. Heterodoxy well supported is often a potent factor in the advancement of knowledge, but heterodoxy poorly supported may cut a sorry figure. In the latter form it is here presented.

Students interested in the question of the spontaneous origin of life will remember the author as the picturesque figure supporting this doctrine in the famous controversy with Huxley and Tyndall in 1870, and later with Pasteur. Doubtless the majority of readers will have assumed that the question was closed and the combatants all at rest. Such is almost the case but not quite; all the warriors of four decades ago have passed away with the exception of Bastian, and all but he were convinced he was wrong and no reader of to-day will have occasion to feel that their judgment was not sound, after a perusal of this book. The discussion has a curious flavor of the quaint and naive in places, as, for instance, when "the germinality" of fluids is spoken of. It almost recalls the alchemists. But again one encounters the views of eminent modern scientists correctly quoted, such a mixture is it of the old and the new, of sound and unsound.

The author frankly admits that he believes in heterogenesis, the de novo origin of life (and, incidentally, contagious disease) and postulates that silicon probably wholly or in part replaces carbon in the composition of the protoplasm of living organisms. Adequate evidence in support of any single one of these doctrines is wanting.

Glass tubes containing solutions of "ammoniac" phosphate, dilute phosphoric acid, liquor ferri pernitratis and sodium silicate or colloidal silica were prepared, hermetically sealed and heated to temperatures ranging from 100° C. to 145° C. for periods of from five to thirty minutes. The tubes were then allowed to stand in the sunlight or shade for long intervals of time and finally opened. Smears made when the tubes were opened were examined under the microscope with a quarter-inch objective and a number 6 eyepiece. The findings in these smears included torulae, bacteria (masses of bacilli and cocci), so-called fungus germs and molds. These findings are regarded by Bastian as being conclusive proof of the spontaneous origin of life. That the questions of contaminations and thermal death points are touched upon in only desultory fashion will be at once realized when one thinks of the nature of these experiments. No cultures were made, no stained preparations, no controls of thermal deaths of resistant spore-bearing bacteria; in a word, no attempt to arrange an adequate experiment.

Dr. Bastian would have served himself and the reading public the better had he gracefully accepted the hint of the Royal Society.

J. G. FITZGERALD, M. D.

* Being an Account of Experiments with Certain Superheated Saline Solutions in Hermetically Sealed Vessels.

Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic, Vol. II. Published by W. B. Saunders Co., Philadelphia, 1911.

This, the second volume of collected papers by the staff of the Mayo Clinic at Rochester, Minn., offers in easily accessible form the published articles emanating from that source during the year 1910. Altogether, there are fifty-four articles, varying in length from pages 5 to 42, and in subject matter from the exhaustive study of W. C. MacCarty on the "Pathology and Clinical Significance of Gastric Ulcer," to Will Mayo's opinion of the climate of Minnesota expressed in his "Notes on Italian Surgery."

Coming from a clinic where so much of the modern gastro-intestinal surgery has been developed one would expect to find a good portion of the volume devoted to a consideration of the diseases affecting the alimentary tract. Such an expectation is abundantly realized. Thus there are 28 papers dealing with conditions affecting the alimentary canal and its associated viscera. Dealing as they do with symptomatology, diagnosis, pathology and treatment, they form a useful and fairly complete text of the subjects treated.

The article by Plummer on "The Technic of the Examination of Esophageal Lesions" well illustrated by reproductions of X-ray plates and diagrams, and the one by C. H. Mayo on the "Diagnosis and Treat-

ment of Esophageal Diverticula," clearly describes methods of diagnosis and treatment which may be followed with confidence by surgeons of less experience.

At this time when so much attention is directed to the discovery of blood, occult and otherwise, in the stomach contents and feces, the observations of Pilcher on the "Absence of HCL with Blood in the Stomach Secretion as a Symptom of Chronic Gastritis" is significant. Of 100 cases operated upon, in only 2 was ulcer found. In four, gastro-enterostomy had been performed elsewhere and was cut off at this operation. There was found, however, in a good proportion of the cases, disease in other organs—in the appendix 36 times, gall bladder 32, gall bladder and pancreas 16, and in 12 cases stomach, gall bladder and appendix were concomitantly diseased. All of which goes to prove the dictum that no abdominal operation, undertaken for the relief of chronic disease, is complete unless a careful examination of all the accessible viscera is made at the same time. No other factor, excepting gross ignorance, makes so much for incomplete abdominal work as the desire to finish the operation in record-breaking time. Yet some great surgeons are not without this vanity.

The ulcer-carcinoma papers by MacCarty and Wilson and Willis have been widely read and frequently quoted. With 70% of all cancers of the stomach showing "gross and microscopic evidences of previous ulceration and isolation of epithelium" any plea for early diagnosis and suitable operative interference is unnecessary. The fact that 12 of the articles in this section deal more or less with carcinoma is proof of the frequency with which this disease affects the alimentary tract and few will deny that in early operation and wide removal lies the only hope of effecting a cure.

The statement of W. J. Mayo on page 127 that they "have never had any complaint of gastric distress from patients after operation" (in gastrectomies or gastrojejunostomies), "if there was unobstructed opening for the passage onward of the food," is certainly not the experience of other operators. These patients often do feel distress after full meals. This distress is prevented by smaller and more frequent feedings which is the secret of the successful after treatment of these cases.

In the genito-urinary section there are three excellent articles by Braasch on "Deformities of the Renal Pelvis," "Recent Developments in Pyleography" and "Examination of the Surgical Kidney. The articles on "Hypernephromata" by Wilson and a "Study of the Histology of the So-called Hypernephromata and the Embryology of the Nephridial and Adrenal Tissues" by Wilson and Willis in the same section, deserve careful study. On the evidence adduced from the study of renal tumors swine and human embryos they conclude that the "so-called adrenal rests are probably of Wolffian origin," in contradiction of Grawitz's hypothesis that the so-called "hypernephromata have their origin in the adrenal rests."

Of the seven articles in the section devoted to the ductless glands four are by C. H. Mayo and deal with the diagnosis and treatment of hyperthyroidism. Coming from the pen of a man of such wide experience the articles are reliable guides in the handling of these most difficult cases. Of the remaining articles, which of necessity must go unmentioned, it is sufficient to say that they hold a fund of valuable information useful to the practitioner as well as the surgeon, affording a storehouse of up-to-date knowledge, with most of which, all of us should be familiar. The print is large and clear, the illustrations of which there are many, generally good; but why publishers persist in using glazed paper is beyond this reviewer's ken. T. G. I.

The Prevention of Sexual Diseases. Victor C. Vecki, M. D. With Introduction by William J. Robinson, M. D. 12 Mt. Morris Park W., New York, 1910.

The synoptical plan followed by the author in the little work before us, detracts in no wise from the frank and wholesome breeziness of his treatment of the subject-matter. He has condensed in most cogent and interesting form, practically the substance of the most mature views on this vital and hitherto usually glossed-over phase of social life. No attempt has been made to benumb the mind with a mass of indigestible statistics; or make mawkish appeal to the sensibilities through the recital of harrowing case-histories. The time and the opportunity for the dissemination of wholesome and unglossed truths regarding the consequences of the disobedience of the laws of sex-hygiene, have long awaited fearless propagandists. The author is one of the first to come into the open with commendable directness and vigor.

This little work should have a wide distribution, not only among the laity, by whom it may be read with exceeding profit by the understanding, but by physicians themselves. The reviewer has only too frequently observed the crude, half-formed and often incorrect views held by the medical profession on matters of sex-hygiene and venereal prophylaxis. For all such this timely little work forms an admirable sign-board.

It were well for the author to have tempered somewhat his extreme, not to say violent, opposition to the very proper and reasonable requirement of the State Health Board calling for the reporting of cases of venereal disease, since the very reason causing him to inveigh so strongly against the rule is swept aside in the absence of anything in the rule to call for a revelation of the identity of the patient.

To be sure this country has as yet no lock and key quarantine and the public is too sadly lacking in information regarding the value of venereal prophylaxis to accept meekly the publicity that goes with compulsory notification in its extreme form. Compulsory quarantine as it exists in Denmark and Norway is only resorted to when the individual refuses or neglects proper treatment of his condition. Up to this point his privacy is safeguarded by a number. When by his refusal to comply with perfectly reasonable regulations looking to the protection of his environment from possible infection, he then becomes a menace from whom the public is entitled to protection.

It is a well-known fact, that the statistics in this country regarding the mere prevalence of venereal diseases and their sequelae are wofully deficient and not calculated to give them their proper importance in the morbidity and mortality statistics. Since by our State Board's ruling the privacy of the patient is perfectly preserved, the reactionary attitude of a large body of the medical men of the State is not readily understandable. If the public, medical and lay, is to be made properly aware of the important role venereal diseases play in the morbidity and mortality in that one-sixth of the 600,000 deaths from preventable diseases, according to the figures of United States Senator Robert L. Owen, then facts must be carefully collected and tabulated.

There can be no body of men better qualified to supply such data accurately than the members of the medical profession. J. C. S.

CHANGES OF ADDRESS.

Edick, George H., 815 So. Olive St., Los Angeles.
Allen, W. L., National City, Cal.
Cosgrave, M., from 86 Post St., to 350 Post St.
Sawyer, Hall Sarah, 626 Gordon Ave., Hollywood, Cal.
Bowlby, Geo. B., from San Diego to 670 So. Alvarado, Los Angeles.

Chase, R. E., from 615 W. 14th St., Glendale, to Bank of Glendale Bldg., Gendale.

Field, A. M., from Tulare to Patterson, Cal.

Craig, M. A., from Winters to 566a 15th St., Oakland.

Helman, Evelyn, Loma Linda, Cal.

Graffin, J. C., Grass Valley, Cal.

Jones, Jno. W., from address unknown to Calistoga, Cal.

Mason, M., 511 14th St., Santa Rosa, Cal.

Cohn, David, from Europe to Fairmont Hotel, San Francisco, Cal.

Cuttle, Fred'k, from Byron Hot Springs, Cal., to Hanford, Cal.

Beard, Jas., from address unknown to Fay Building, Los Angeles.

Ball, J. D., from Livermore to Central Bank Bldg., Oakland.

Boatman, H. F., from Douglas Bldg. to Broadway Central Bldg., Los Angeles.

Wakeman, Nathan L., 254 So. Broadway, Los Angeles.

Tryon, F. M., 105½ N. Hope St., Los Angeles.

Boyson, T., Plymouth, Cal. (Amador Co.)

De Monco, Almo, 124 W. 6th St., Los Angeles, Cal.

Towler, Wm. Bradley, 1217 W. 47th St., Los Angeles, Cal.

Royer, Henry C., Terminal Island, Cal.

Pinquard, J. P., 2050 W. 29th St., Los Angeles, Cal.

Merrill, Carlton Smith, 108 W. 2nd St., Los Angeles, Cal.

Hon, N. H., Story Bldg., Los Angeles, Cal.

Hanvey, C. B. H., from Berkeley, to Bank Bldg., Fair Oaks, Cal.

Hickman, Allen Ray, 1001 W. 22nd St., Los Angeles, Cal.

MacChesney, A. C., from Los Angeles to Clay and Hellman Sts., Monterey.

Banks, A. E., from 3872 5th St., San Diego, to Smith Bldg., San Diego, Cal.

De Ville, Leon, from Oakland to——

Pawlicki, C. F., from address unknown to Hopkins Bldg., Bakersfield.

Biggs, Elmer LeRoy, Trust & Sav. Bldg., Los Angeles, Cal.

Hanson, W. F., 1126 Angelina St., Los Angeles, Cal.

Herzstein, Morris, from 1404 Sutter St., to 805 Sutter St., San Francisco.

Boskowitz, G. H., from 1887 Sutter St. to 391 Sutter St., San Francisco.

Connolly, T. W., from 2529 Howard St., to Hearst Bldg., San Francisco.

Sutherland, H. H., from address unknown to I. W. Hellman Bldg., Los Angeles.

Walker, Agnes, from Belmont Hotel, to Hotel Normandie, San Francisco.

Titchworth, J. C., from 1800 Divisadero St. to 1881 Divisadero St., San Francisco.

Carpenter, F. W., from 995 Market St. to 33 Powell St., San Francisco.

Chapman, Florence P., from San Francisco to Corona, Cal.

Reud, Wm. R., from 3820 San Pablo Ave., Oakland, to Herald Bldg., Oakland.

Parish, H. L., from Thayer Bldg., Oakland, to 1124 8th St., Oakland.

Klein, W. C., from Los Angeles to St. Joseph's Hospital, Kansas City, Mo.

Rookledge, P. L., from Cambria to Wade Bldg., San Luis Obispo.

Harvey, W. P., from 240 Stockton St. to 391 Sutter St., San Francisco.

Stoughton, A. V., from Santa Cruz to 630 Harvard St., Claremont, Cal (Los Angeles Co.)

Hilton, H. J. T., 2703 Raymond Ave., Los Angeles, Cal.

Waller, Geo. P., from address unknown to 1415 Laurel St., South Pasadena, Cal.

Green, Nat., from address unknown to 120 E. 9th St., Los Angeles.

McEnery, W. A., from 86 Post St., San Francisco, to ——?

Van Dalsem, S. B., from Palo Alto to Porter Bldg., San Jose.

Wood, W. B., from address unknown to 1611 Marengo Ave., Pasadena, Cal.

Peebles, J. M., 519 Fayette St., Los Angeles, Cal.

Smiley, W. C., from Los Angeles to Beaumont, Cal.

Belknap, Florence A., from Fairfield Station, San Jose, to 3rd and Santa Clara Sts., San Jose.

Brown, Jos. Richard, from Napa to ——?

Bulson, C. H., from Veterans' Home to Napa, Cal

Frary, L. A., from Napa to Cloverdale, Cal.

Sponogle, F. M., from 821 Market St. to ——?

Gregory, A. M., from Turlock to Placerville.

Francis, L. H., from Sacramento to Tuolumne.

Stone, W. J., from San Quentin to Cheda Bldg., San Rafael.

Davis, Geo. W., from Lincoln, Cal., to 1170 Sutter St., San Francisco.

Crokat, Edw. A., from Pasadena to Arrowhead Hot Springs, San Bernardino Co., Cal.

Brown, Wm. L., from 534 Knox Pl., Oakland, to—

Autemeid, Felicia, from 598 Santa Rosa Ave., to—

Widney, J. P., from 150 W. Adams St., Los Angeles, to 3900 Marmion Way, Los Angeles.

Freedman, Chas., from Redondo, Cal., to Title Insurance Bldg., Los Angeles.

Gehring, G. P., Melrose Ave. and Grove St., Los Angeles, Cal.

Dickerson, W. L., from 626 Orange St., Long Beach, to 449 Pine St., Long Beach.

Peironnet, F. M., from Wilmington, Cal., to Los Angeles, Cal.

Byron, R. L., from Auditorium Bldg., Los Angeles, to Lissner Bldg., Los Angeles.

Hoskins, G., from San Francisco to Knob (Shasta Co.).

Dorr, L. L., from City and County Hospital, San Francisco, to St. Luke's Hospital, San Francisco.

Harrison, W. H., from 692 5th Ave., San Francisco, to 42 Market St., San Francisco.

Allan, Hamilton, San Diego, Cal.

Savage, Chas. W., 2339 Ward St., Berkeley, Cal.

Kellogg, W. H., from San Francisco to 2101 Dwight Way, Berkeley.

Nelson, Lois, from 1854 Cedar St., Berkeley, to 1608 Grove St., Berkeley.

Bancroft, I. R., from City Health Office, Los Angeles, to 2314 Lolta St., Los Angeles.

NEW MEMBERS.

Doyle, G. P., Bishop, Cal.
Brown, E. M., Los Angeles.
Maisch, A. F., Los Angeles.
Charlton, A. T., Los Angeles.
Bacher, J. A., Santa Clara, Cal.

DEATHS.

Dorroh, Jno. R., Angels Camp.
Johnstone, Arthur, died in New York.
Bates, Chas. Bell., died in Massachusetts.
Aiken, Edw., address unknown.
Allen, C. E., Stockton, Cal.
McMahon, Jno., San Jose, Cal.
Hatch, H. W., Oakland, Cal.
Kelley, J. W., died in Portland, Ore.
McCurdy, Samuel, died in Berkeley, Cal.
Young, Carrie F., Berkeley.
Ledyard, W. E., Alameda.
McNeil, Alexander, San Francisco.
Stelzner, Emil, San Francisco.
Wells, Edith C., San Francisco.
Combs, F. A., Visalia.
Wagner, Jno., San Francisco.
Smart, W. N., San Diego.
Schnabel, Martin, Bakersfield.

California State Journal of Medicine.

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. X FEBRUARY, 1912. No. 2

SPECIAL NOTICE.

Forty-second annual meeting of the Medical Society of the State of California.

Del Monte Hotel, Del Monte, April 16th, 17th and 18th, 1912.

Railroad rates the same as usual; one and one-third fare for the round trip.

The provisional program, subject to revision and correction, is as follows:

The Committee on Scientific Work of the State Society has so far arranged for the following program:

There will be one symposium on "Poliomyelitis" in which so far the following men will participate:

Prof. Hans Zinsser of Stanford University will speak on the experimental side of the problem; Dr. R. L. Wilbur of Palo Alto on the Clinical side of early cases; Dr. T. J. Orbison of Los Angeles on the Neurological side; and Dr. J. T. Watkins of San Francisco on the Orthopedic side.

There will also be a symposium on Salvarsan and the Wassermann reaction. This will be a joint meeting with the Pacific Coast Branch of the American Urological Association. The following gentlemen will take part in the discussion: Dr. Walter Brem of Los Angeles, Dr. Wm. F. Cheney of San Francisco, Dr. Chas. D. Lockwood of Pasadena, Dr. Geo. Newmark of San Francisco, Dr. H. B. Oliver of San Francisco, Dr. Leon J. Roth of Los Angeles, Dr. W. F. Schaller of San Francisco, Dr. V. G. Vecki of San Francisco.

Major Roger Brooke of the U. S. Army Medical Corps has kindly consented to read a paper on "Typhoid Vaccination." Dr. Dudley Fulton of Los Angeles, who is in charge of the Medical part of the program annouces the following papers:

Dr. C. M. Cooper and Geo. L. Painter, "The Role of the X-Ray in the Diagnosis of Diseases of the Stomach (illustrated by lantern slides);" Dr. Robt. L. Cunningham of Los Angeles, "The Mechanism and Clinical Aspect of Chronic Arterial Hypertension."

Dr. Andrew L. Lobingier of Los Angeles, who is looking after the Surgical side of the program announces so far: Dr. E. T. Dillon of Los Angeles, "Report of a Case of Cerebral Cyst;" Dr. Guy Cochran of Los Angeles, "Operative Treatment of Fractures;" Dr. Rae Smith of Los Angeles, "Hepatic Abscess with Report of Cases." He hopes to have several important communications from San Francisco surgeons.

Dr. D. Friedlander of San Francisco will read a paper on "The Diagnosis of Tuberculosis of the Skin;" Dr. LeRoy H. Briggs of Oakland, "Clinical Value of the Arneth Method of Blood Examination;" Dr. Annie W. Williams of Hayward, "Dietetics from the Modern Standpoint."

Following is the provisional program for the Eye, Ear, Nose and Throat Section:

Dr. Chas. Miner Cooper, San Francisco, "Diagnosis of Hypophyceal Affections;" Dr. Ernest C. Dickson, San Francisco, "The Pathology of Hypophyceal Affections;" Dr. H. B. Graham, San Francisco, "The Operative Procedures in Hypophyceal Affections;" Dr. Boardman, San Francisco, "The Radiography of the Hypophyceal Region;" Dr. Henry Horn, San Francisco, "The Nose in Its Relation to Bodily Reflexes;" Dr. Leo. Eloesser, San Francisco, "Plastic Surgery of the Nose;" Dr. Edward C. Sewall, San Francisco, "The Relationship Between Angio-Neurotic Edema and the Accessory Sinuses of the Nose;" Dr. W. F. Blake, San Francisco, "Pulsating Exophthalmos;" Dr. Vard H. Hulen, San Francisco, "General Anesthesia in Cataract Work;" Dr. E. W. Alexander, San Francisco, "Pathological Conditions of the Eye Secondary to Diseases of the Lymphatics of the Neck and Throat;" Drs. Suggett, Day, Dunn, San Francisco, "Orthodontia in Its Relation to Nose and Throat Work."

EDITORIAL NOTES.

OWEN BILL.

A number of requests for a copy of the last Owen bill to create a Department of Public Health have been received, and as the matter is of the greatest importance to public health, the JOURNAL, elsewhere in this issue, prints the bill in full. It will probably be some time before the Congress will enact any law of this nature, and it is quite possible that when such a law is finally passed it will differ somewhat from the present proposed measure. However, the object to be achieved will remain exactly the same, and so what minor changes may be made in the bill will be more or less immaterial as against the general features and, above all, Federal supervision of the public health. We should all be informed on the subject and at all times ready and willing to impart our knowledge to the public, but it would seem to be unwise to make any strenuous fight to secure such a measure until the public itself understands the situation, realizes the need for it and demands its enactment. It is the ordinary, average citizen who will settle the question in the end—as the JOURNAL has stated repeatedly—and our profession can but advise and instruct.

EXPLOITERS OF NOSTRUMS.

A good many of the most prominent physicians and surgeons in this country are helping to exploit and promote the use of some unspeakably noisome nostrums. Some of the "leaders of the profession"; some of those we are all in the habit of looking up to; some of the leaders in the American Medical Association are doing just this, though they may not realize it. How? By contributing articles to so-called medical (?) or surgical (?) journals that accept the advertisements of these rotten things. In the *Journal of the A. M. A.* for December 16th appears an article on this subject which refers to the *American Journal of Surgery* and gives a list of the nostrums advertised by that surgical (?) journal. Men who have helped to build up the American Medical Association and the Council on Pharmacy and Chemistry (you know the Council stands for just one thing—*honesty*) are on the list of contributors to the publication mentioned. The STATE JOURNAL has, for years, harped on this very question; so much so that several medical (?) journal publishers got very "peevish" and would no longer exchange publications. When will it stop? When will decent men learn that to contribute or subscribe to such periodicals is merely aiding in the promotion of the worthless nostrums they advertise?

MEDICAL DEFENSE.

Though the co-operative plan of defending our members in all actions for alleged malpractice has been in successful operation since July 1, 1909, and although, parenthetically, *no judgment has been entered against any practitioner in this state since that time,* a number of our members do not seem to understand it. For this reason, and for the reason that certain insurance companies have seen fit to make untrue remarks, it seems wise to set forth, in full, the general plan and scope of the work, rules, etc. The plan itself is the simplest form of co-operation; the members of the Society have decided that, through the machinery of the State Society, they will defend each other in all actions for malpractice that may be brought against members. To cover the cost, a small amount was added to the annual assessment, and it has been found to be ample. The rules laid down by the Council and prepared by our attorney, and subsequently approved by the House of Delegates, are about as simple as any rules could be.

First. All communications must be made to the Secretary of the State Society, Butler Building, San Francisco, California. This is in order to avoid confusion or doubt and concentrate all correspondence in one office.

Second. If a suit is threatened, do not wait for it to be filed but notify the Secretary immediately. The matter is then placed in the hands of our attorney and, as a rule, no suit is brought.

Third. Be sure that you are at all times in good standing (dues fully paid up) in your county society. Only members in good standing in a county society (and therefore in good standing in the State Society) will be defended.

Fourth. The alleged malpractice must have occurred after the first day of July, 1909, and at some time when the defendant was a member in good standing in his society. *A member suspended for unpaid and overdue dues is not in good standing.*

Fifth. Any member who may be served with any papers in any suit must send the original papers or a true and exact copy of them to the Secretary of the State Society *within two days.* In all such suits ten days are allowed in which to file an answer, so that ample time is allowed our attorney to take up the matter of defending the suit.

Sixth. As soon as possible after sending in the papers, the defendant member shall send to the Secretary a full account of the case, diagnosis, treatment, etc., which statement, together with the other papers in the case, will be pleased in the hands of our attorney immediately.

THE PLAN IN GENERAL.

The foregoing rules are certainly about as simple as anything could be. Avoid a suit, if possible, by turning all threats over to a good lawyer. If you are sued, turn the papers over to our attorney, tell him about it, and then don't worry. Since July, 1909, a great many threatened suits have been avoided and every suit that has been filed has been successfully defended. And all this at absolutely no cost to the members in question except the small amount of their dues. We have an attorney in San Francisco and another in Los Angeles, both of whom are retained yearly by the State Society. These gentlemen have made a special study of just this sort of work and are far more able and competent to defend such actions, or direct the work of defense if a suit is tried in some outlying place, than any ordinarily

good lawyer who might never have encountered such an action before in the course of his experience.

Note this fact well. Our attorney in the South writes as follows:

> "In Magee *vs.* Tittle, pending in San Diego, it will be well for the Society to note that our client, Dr. Magee, was insured by some defense or casualty company, but as the policy contained a clause written in fine print to the effect that the insurance company would not defend where the claim arose on a cross-complaint, they refused to defend for him. Dr. Magee tells me that in San Diego there were about ten physicians who gave up their policies in this particular company on account of that clause."

What do *you* think of that sort of insurance? A patient owed a doctor a just debt. The doctor brought suit to collect what was due him. The patient, to scare him off, brought a counter suit or "cross-complaint" alleging malpractice. And then the "insurance" company brought out its little "joker" and refused to defend this doctor who had been paying them money under the mistaken belief that he would be defended. What happened? Why, the physician in question, being a member in good standing, is having his suit defended by the State Society at no cost to himself. *Which form of protection really protects?*

WHAT DO YOU THINK?

What do *you* think about that form of "insurance?" This game of "bilking the doctor" is a very lovely one—for the patient who waits to avoid paying his bill. It costs him less to file a malpractice suit than to pay his bill and, unfortunately, the majority of physicians have, in the past, let the matter stop there rather rather than be brought into an expensive lawsuit. But now, through co-operation, we have put a stop to that game. The State Society will defend all such actions. Of course any members who wish to keep on paying money to insurance companies for that sort of "insurance" may do so. It just helps the companies to get richer and gives the physician not the slightest atom of protection more than he is asssured by simply keeping up his membership. And, furthermore, just stop and think that quite possibly about the time you really need protection, the "insurance" company will probably find some clause in the policy that releases it and puts the financial burden back upon you. The JOURNAL has avoided all criticism of insurance companies, for it was the opinion of the Council that a dignified attitude of silence should be maintained. But when a case like this comes along it is high time that our members were in possession of the facts.

Another lie that is being circulated by the agents of certain insurance companies is to the effect that the State Society could not afford to defend an action on appeal in case a verdict were given for the plaintiff. That is absolutely untrue. If any agent tells you that, he is telling you what is not true. We have already referred to this in the JOURNAL, but now repeat the assurance.

Medical defense by the State Society is absolute protection; defense by some insurance company may or may not be protection.

DOCTOR WILEY.

There are so many "glooms" in the work-day world that it is a blessing when a few "joys" come along and put them to rout. Also, thank the Lord for a sense of humor! Since the crafty plot to discredit Dr. Wiley and practically put an end to the enforcement of the Pure Food and Drugs law failed, various and sundry trade journals have been full of the bitterest sort of editorial matter relating to the incident and attacking Dr. Wiley. The *Western Druggist,* largely supported by nostrum advertising, calls "the Wiley 'vindication' a triumph of hypocrisy and unlawful 'precedent'"; the *American Food Journal* has a somewhat less bitter article; other publications are more or less bitter, but they all howl the same song. "We want pure foods and drugs—surely—but we do not want a man who is going to enforce the Pure Food and Drugs act; such conduct interferes with business!" Why this strange unanimity in attack upon Wiley? It is so childishly simple, the explanation! Nearly all these trade publications (like nearly all medical (?) journals) are supported in great measure by the advertisements of things that have no honest or legitimate excuse for living. The quack, fraudulent, adulterated thing that makes a lot of money for the promoter is widely advertised; it lives on advertising just as the professional abortionist does. Stop the advertising and you kill the evil. These trade publications (also like the majority of medical (?) journals) want the money, clean or dirty. The enforcement of the Pure Food and Drugs act has killed off a good many and will kill off a good many more; and when they are killed—when the frauds can no longer be marketed—it is a waste of money to advertise them. Therefore the attitude of the trade journals. Is it not simple? Yes, my child.

SURGEON-GENERAL RUPERT BLUE.

Distinctly gratifying to the profession of this state must be Dr. Blue's appointment by President Taft to the post of Surgeon-General of the U. S. Public Health and Marine Hospital Service, and in commenting upon this promotion we not only heartily congratulate the doctor, but just as heartily the country. Rupert Blue has on past occasions been publicly and privately deluged with the thanks of California, and particularly San Francisco, for his monumentally efficient labors in his sanitation work out here, and it is not our purpose to embarrass him with another saccharin effusion. He knows that we hold him in the highest esteem personally as well as professionally, so we'll let it go at that and address no further words to him along that score. Still, while we talk it over among ourselves, we must confess that it warms our cardiac cockles to see "Unser Ru-

pert" get the recognition he deserves, and don't we feel something like proud and anxious parents who, when they see their boy successful, consider the money spent on his education not wasted. Let it be known, oh, members of the profession of sister states, that this distinguished person is a naturalized Californian, for he blossomed here like the orange, not the lemon. It's a man's work, this Surgeon-Generalship, and a real man is to carry it on. We send him on his course with sincere, cordial and hearty wishes from the warmest friends he can have in the world. Even at the risk of sounding the note discordant, we cannot refrain from crowing a bit on this joyous occasion and call the attention of our notorious ex-Mayor Schmitz and ex-Governor Gage to their former statements that there was "no plague in San Francisco."

ORIGINAL ARTICLES.

The JOURNAL is always glad to receive original articles, whether they have been read before the Society or not. Short reports of clinical cases of general interest are particularly desirable. Illustrations, when they are really necessary to elucidate or really add to the text, will be made at our expense, provided the author furnishes clear and satisfactory drawings or photographs. *Manuscript should never be rolled.* It should be sent flat, between boards, or folded. It must be typewritten to receive consideration. Authors should remember that the compositor, or typesetter, puts into type exactly what he sees before him on the manuscript, unless it is otherwise marked. Look at your manuscript with this fact in mind and picture to yourself what it will look like when put into type exactly as you have written it. It is a very common thing for an author to abbreviate certain words in order to save the trouble of writing them out. They are simple and obvious abbreviations, to him, but they are meaningless to the typesetter. Also, they would not infrequently be almost meaningless to any other reader, to say nothing of the fact that a scientific communication is supposed, so far as we are concerned, to be a statement of things in the English language and not a guessing contest or a puzzle. "Ant. sup." may mean anterior superior to the author, but we would hate to say what it might look like to the compositor! Not infrequently otherwise valuable manuscripts have to be returned for this reason. Furthermore, *please* try and spell proper names correctly every time they are used. To find a reference to "Dr. Smith" on one page and to the same man as "Smythe" on another is, to say the least, somewhat confusing; when repeated, with further variations, it has been known to cause violent profanity. Charts, and especially tables when they are at all extended, complex or bulky, are very expensive things to reproduce and, ninety-nine times in a hundred, are not half so necessary or important as the author thinks they are. Of course, it is always the editor's fault if an article submitted does not receive publication. No author has ever been known who would admit the slightest reason for withholding publication except the cantankerousness or personal bias of the editor. That seems to be human nature. An author will write: "The matter is so well known to you all that it seems hardly necessary to mention it"—and then proceed, for the next few pages, to write out what is "so well known to you all"; and then, if this portion of his article is "cut out," he is quite hurt.

These are just a few suggestions with nothing personal about them and no special articles or authors in mind (that is not entirely true). If you will read them over and think about them it will be a great help to (1) yourself, (2) the editor and (3) the compositor.

A SKIN REACTION IN SYPHILIS.

This subject was discussed in the November editorial columns of the JOURNAL. At that time there was described the work of some French investigators who found that they were able to produce skin reactions in a number of syphilitics by injecting intradermically a sterilized glycerin extract of syphilitic liver tissue ("syphiline"). Later it was found that similar results could be obtained by using a concentrated extract of normal liver. The hope that the reaction might be attempted with promise of greater success by using extracts free from tissue constituents, became possible of realization when artificial cultures of the treponema pallida were obtained. Noguchi has been growing the organism in pure culture (anerobically in ascitic fluid and ascitic fluid agar, to which had been added placenta tissue). From these cultures he has prepared suspensions of the treponema pallida, containing about 40 to 100 dead organisms to the field (as seen with the dark field condensor). This suspension, which he calls "luetin," was injected intradermically in a large number of rabbits having experimental syphilis and also in four hundred human subjects, with very interesting results. Noguchi gives a full account of his work, with illustrations, in the *Journal of Experimental Medicine* (Dec. 1, 1911). The work has been well controlled in the rabbit as well as in the human series.

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Of the four hundred human cases studied, 177 were syphilitic, 77 parasphylitic and 146 were non-syphilitic (of the latter there were "46 normal individuals, chiefly children between the ages of 2 and 18 years and 100 individuals suffering from various diseases non-syphilitic in nature"). In *none* of these non-syphilitic cases was a positive "luetin" reaction obtained. For control, in each instance, Noguchi injected an emulsion prepared from non-inoculated media exactly similar in every respect to that on which were grown the organisms used in making the "luetin." The phenomena observed at the site of the control injection were quite different from those at the site of the "luetin" injection in each instance, although in some few cases the control reaction was more marked than in others. When the latter occurred the "luetin" reaction also was relatively more pronounced and persisted longer.

Noguchi notes that a "positive reaction" after the injection of luetin presents the following char-

acteristics: In twenty-four to forty-eight hours "a large raised, reddish, indurated papule, usually five to ten millimeters in diameter" appears. It may be surrounded by a "diffuse zone of redness and show marked telangiectasis." During the following three or four days the dimensions and degree of induration slowly increase. Then the process gradually subsides, disappearing usually in about a week. In some cases on the fourth or fifth day the papule becomes edematous and later vesicular, and then pustular, finally terminating in a crust which falls off in a few days without leaving induration or scarring. The intensity of the reaction varies widely in different cases. In a very few instances the injection sites fade away almost completely within three or four days, acting like negative reactions, and then after ten days or longer, give rise to small pustules which gradually subside the same as the pustules just described. Following the injection of luetin in non-syphilitic cases, "a small erythematous area" appears at or around the point of injection in from twenty-four to forty-eight hours. There is no local pain or itching. The process recedes in forty-eight hours and leaves no induration. In some cases there may be a small papule after twenty-four to forty-eight hours which soon begins to subside within seventy-two hours, leaving no induration.

In most of the positive cases a slight rise of temperature occurred and lasted a day, but there were no marked constitutional symptoms excepting "in three tertiary cases and one hereditary case when general malaise, loss of appetite and diarrhea were noted." The results in parasyphilitic cases were unsatisfactory, but Noguchi states that further work will be attempted with more active preparations of "luetin." He will have something to report in this regard in a later paper.

The reaction was positive in 100% of the manifest tertiary cases, in 94% of the latent tertiary and in 96% of the hereditary cases. During the primary and secondary stages in the human cases the reaction often failed and when present, it was of mild degree. In those cases in which energetic treatment was carried out (particularly with salvarsan) the reaction was apt to be severe. Rabbits which had been given repeated inoculations of either living or killed pallida showed "well marked inflammatory reactions." The test failed in rabbits showing active syphilitic orchitis and also in those in which the condition had been cured by the administration of salvarsan. Also normal rabbits gave no reaction. Noguchi observes that "it appears probable that the Wassermann reaction is more constant in the primary and secondary, and the cutaneous reaction in the tertiary and latent forms of syphilis. Moreover it appears that the Wassermann reaction is more directly and immediately affected by antisyphilitic treatment than is the cutaneous reaction."

This most important work now being done by Noguchi at the Rockefeller Institute seems destined to produce something of practical value in the diagnosis of syphilis and his later reports will be awaited with great interest.

HARRY E. ALDERSON.

TYPHOID VACCINATION.

This subject is moving rapidly to the front and will soon demand more exhaustive clinical investigation than has so far been given. Let it first be noted that typhoid is not only a very prevalent disease, about 500,000 cases occurring yearly in the United States, but a very fatal disease running at a mortality of 12% to 15% and causing about 35,000 deaths annually. If, therefore, the number of infections can be materially reduced or the mortality of the infected lowered medical science will score another triumph in the relief of human suffering. The practice of vaccination with sterile cultures of the bacillus typhosus has already definitely achieved the first, and promises later to effect the latter. The prophylactic success of these injections is no longer open to any doubt. It has been pretty well recognized for some time that the incidence of typhoid among the protected troops of Great Britain and Germany had been reduced to half the usual average. In the case of the British army the figures covering a period of five years show a reduction of infection amounting to two-thirds (15 per thousand to 5) and a lowering of mortality to less than one-fourth (3 per thousand to 0.63). This country was the last to adopt the practice but bids fair to show the most brilliant results in its application. That of 60,000 soldiers inoculated there should (in a period of 3 years) occur but 12 infections and not one death is little short of a marvel. Nor can it be asserted that this is due to an abnormal absence of opportunities for contracting the disease. Nothing can be more definite in this respect than the information given by Captain J. M. Phalen, M. D., in a paper before the Philadelphia Pediatric Society (vide *J. A. M. A.*, Vol. LVM, No. 1), showing that during the period that 4,000 men were in camp at Galveston, Texas, no case of vaccinated typhoid occurred among them, while the unprotected citizens ran up a score of 192 cases, yet both soldiers and citizens partook of the same food, milk and water. Facts such as these place the prophylactic value of antityphoid vaccination beyond dispute. Its utility as a method of treatment is not at first glance so theoretically obvious, but a little consideration will show that it too can be justified. Typhoid is a blood as well as a tissue infection and its general symptoms are due to the endotoxins liberated from the dead bacilli. It might well be objected that to add more toxin-yielding bacilli to an already intoxicated organism could only increase the severity of the symptoms and the danger to life. Doubtless there is a temporary increase of circulating toxin but this is neutralized by the great advantage of an early and increased production of antibodies and arrest of the disease. It is to be noted that the inoculated matter while stimulating the production of all the antibodies, antitoxins, agglutinins, opsonins and bactrocidins and being by them neutralized probably fails to fix any of the bactrocidins (the inoculated bacilli being already dead) and thus directly leads to the dominance of that particular antibody chiefly responsible for the arrest of the disease. With this justification for the

theory there is the commencement of a gratifying number of reports of successful practice. Dr. Phalen states that probably not more than 400 cases have so far been reported. The number is too small to afford a basis for positive opinion, especially as the dosage has been very irregular and seemingly generally too small. The best results are with large injections, one to two billion bacilli. But treatment apart, the vital fact remains that had the civil population the protection now given the army, 30,000 lives a year would be saved, and an enormous amount of sickness and subsequent ill health avoided. It is our duty to urge prophylactic vaccination in every typhoid afflicted community and institute a scientific investigation of its curative effects in every large institution.

H. D'ARCY POWER.

CONTRACT PRACTICE.

East, west, south and north, throughout the country, the question of contract practice is being discussed by physician and layman; the question of liability for industrial accident by employer and employee. In these days of social unrest it is quite obvious that socialism is making progress. The laboring classes and the ever-present poverty-stricken are clamoring louder and louder for legislation that will better their social status. Reform movements, insurgents—call them what you will—gain in strength and adherents in direct proportion to their attacks upon the capitalistic class, and to their promises to the proletariat. Our state legislature has recently been asked to deal with an Employers' Liability bill. There is no question but that very many excellent principles are embodied therein. We are just as positive in our belief that there are many features that will prove rather bad when it comes to actual practice.

One of our county societies has a committee on contract practice, or rather as it is called, a "Hospital Commission." In a preliminary report (after over a year's work) it has classified the hospitals into "Acceptable," "Provisionally Acceptable" and "Not Acceptable" ones. This is its first step in a campaign which, it hopes, will result in the correction of the hospital and contract practice abuses. In another county, where the profession is well united, a newly-organized fraternal organization found no physician willing to submit to its terms.

There is no question in our mind but that hospital associations are here to stay, and that contract practice will in the future show increase rather than decrease. But if these incorporations, organized by laymen, frequently unscrupulous "promoters," be allowed to spring up and dictate terms to the medical profession, no end of evil will ensue. And the very men, now so eager to serve these corporations, will necessarily be the greatest sufferers.

We see absolutely no objection to hospital associations if they reject for membership all individuals whose incomes are such as to enable them to well afford the services of a private physician, provided that the hospital physicians are paid a fair wage. We see no objection to an association that is formed for benevolent purposes, and furnishes board, shelter, drugs, general care and nursing when necessary, but leaves it to the patient to settle the question of fee with the association's physician or any other physician he may choose to employ.

In discussing the above subjects with our fellows, too often do we hear, "Oh, well, what can we do about it? we cannot change existing conditions." In answer to those who feel the same way, we would state that agitation on these topics has just begun, and it behooves the profession to be alive to its interests and to study seriously these great social questions. In England, the national insurance bill has passed both houses of Parliament by a large majority, in spite of its unpopularity with certain classes, notably the medical profession. The British Medical Association fears that it may prove not only injurious to the profession, but also detrimental to the practice of medicine, and though it formulated six cardinal principles, which it desired respected by the bill, only two of them were incorporated in the bill, but it is probable that the others will be given practical recognition. (These will be found in the *J. A. M. A.*, p. 2090, Dec. 23, 1911; also p. 2094; better still in the supplement to the *Brit. Med. Jour.*, Dec. 9, 1911).

In Germany where the national insurance practices have been in effect since 1882, physicians have been complaining more and more of the hardships thereby imposed upon them, and have pointed out the evils. Curiously enough, however, we are now informed by the retired President of the Senate in the Imperial Insurance Office of Germany, that after a service of over twenty years, he finds that the system of compensating workmen for accidents, instead of replacing pauperism and charity, is itself merely pauperism under another form, and that it has become a hotbed of fraud, and therefore a spreader of demoralizing practices and ways of thought. Coming from this source nobody can accuse the faultfinder of being prejudiced. His report (published in English by "The Workmen's Compensation Service and Information Bureau" of New York City) is well worth studying, and certainly should serve as a warning to those who believed that the working of Germany's system was well nigh faultless.

RENÉ BINE.

MEDICAL DEFENSE.

The following circular letter was prepared by the attorney for the State Society in July, 1909, and a copy was sent to every member of the Society. It was published at least twice in the JOURNAL, but it seems wise to publish it again. To the statements made therein it is only necessary to add that the plan has proved to be a complete success. It is no longer an experiment but an every-day working part of the machinery of the State Society. Do not waste time wondering "if

it will work out"; it has worked out; it is a perfect success.

To All Members of the Medical Society of the State of California:

You are hereby notified that this Society has undertaken to defend free of cost to its members all suits which may be brought against any member of this Society based upon any malpractice alleged to have occurred on or after the 1st day of July, 1909.

Any person hereafter joining his respective County Medical Society shall be entitled to the same privilege, but no defense of any action shall be undertaken for any malpractice alleged to have occurred prior to the date of the joining of the County Society by any member who may be so sued.

Such defense shall only be undertaken by this Society during the period that the member being sued is in good standing and dues fully paid and the Society reserves the right at any time to abandon any such defense if a member shall cease to be in good standing or his dues become due or unpaid.

Any member who may be served with any papers in any suit involving a claim for damages for malpractice shall, within two days after the delivery of the same to him, transmit them, or a full, true and correct copy of the same by registered mail, postage fully prepaid, to the Secretary of the State Medical Society at the Butler Building, San Francisco, California, and a failure so to do shall relieve the State Society from any obligation to defend or any liability for default. Any member so sued shall see to it that no default is entered against him until the attorney for the State Medical Society shall have had an opportunity to communicate directly with him. As soon as practicable thereafter, any member who may be sued shall transmit to the Secretary of this Society a statement in writing of all the facts having any bearing upon the case and must agree at all times thereafter to furnish any information which may be requested by the Society or by its Attorney. The General Attorney for the Medical Society of the State of California is W. W. Kaufman, 1303-1304-1305 Humboldt Bank Building, San Francisco, California.

When a local attorney is to be selected to take charge of a case in the county in which the same may be commenced, he shall be so selected by the joint action of the defendant, his County Medical Society and the Attorney for the State Medical Society.

If they cannot agree upon a local attorney, the defendant shall have the right to select such local attorney as he may desire and the State Medical Society shall contribute such an amount to the compensation of such attorney as may be selected by any defendant as the local attorney selected by the attorney for the State Medical Society would agree to perform the same work for.

The services of the said attorney shall be without charge to any member of the Society, and if the Attorney for the State Medical Society, the defendant, and the County Society can agree upon the local attorney, his compensation shall be without any cost or expense to the defendant.

At the time of transmitting any papers served upon a member, or copies thereof, to the Secretary, such member shall immediately sign and transmit an authorization substantially as follows:

"I, the undersigned, do hereby authorize the Medical Society of the State of California and W. W. Kaufman, as Attorney for said Medical Society of the State of California, to undertake the defense of an action brought against me by (here insert name of plaintiff), in the Superior Court of the County of (here insert name of County), on the (here insert the date of summons), free of any cost or expense to me and in accordance with certain resolutions passed by the Council of the Medical Society of the State of California."

It is the belief of the Council of the State Medical Society that the scheme which it has undertaken will be extremely beneficial to its members. Convinced as we are that the vast majority of these cases are conceived in blackmail, we are satisfied that litigants and their attorneys who know that behind the defense of any practitioner who may be accused of malpractice is the entire State Medical Society, together with attorneys whose fees are paid by the Society, that that fact alone will cause any person to hesitate before commencing an action.

We are led to believe that doctors sometimes pay a small sum of money to avoid these claims, upon the theory that they would have to expend that much for the fees of an attorney to defend a suit. This encourages a very bad practice and we believe that the present plan of the Medical Society of the State of California will do away with it.

PHILIP MILLS JONES,
Secretary.

C. G. KENYON,
Chairman of the Council.

REMEMBER!

Protection by the State Medical Society

PROTECTS!

Does An Insurance Policy Really Protect?

THINK IT OVER

ORIGINAL ARTICLES

MEDICAL ORGANIZATIONS AND CONSERVATION OF THE PUBLIC HEALTH.

President's Address at the Annual Meeting of the Los Angeles County Medical Association, December 15th, 1911.

By W. JARVIS BARLOW, M. D., Los Angeles.

Conscious of a high trust and mindful of greater happiness, the men and women of the medical profession have ever stood for the betterment of human conditions. They have accomplished humanitarian work through personal efforts, unselfish actions, over-work, with or without remuneration, visiting the rich and the poor, by constructive work for the relief of suffering through hospitals, dispensaries, health camps, settlements and the several relief organizations in one way or another to make life easier, healthier and better and to help a universal need—the prevention of disease. As individuals they stand well and are respected by their neighbors, friends and the community; but collectively or as an organized body they seem to hold, at the present time, a different and somewhat unpopular position. Honor and appreciation of altruistic endeavor, are rarely accorded and should not be expected by those who act from the highest motives.

When this Society chose its President one year ago, he was deeply moved with gratitude for so great an honor conferred on one who felt he had accomplished too little to deserve it. These twelve short months have given much pleasure mixed with extra duties to him who has tried to devote his best thought and energy to this organization.

The conservation of health, modern or preventive medicine and the relation of the County Society to public health, are subjects that are most important to the evolution of American Medicine, and a number of reasons exist why such topics are particularly pertinent at this time.

Prevention of disease has made its great strides in the last thirty years, in which time the organisms causing the different diseases were discovered. The years 1880-1890 gave us the bacillus of typhoid, of tuberculosis, of diphtheria, of tetanus, of cholera and the coccus of pneumonia, two years later influenza, and plague in 1894. Having the true causes of diseases, the profession began intelligently to instruct the public in their prevention. A few years brought the greater triumphs of prevention of malaria and yellow fever, and by sanitary measures of prevention transformed pest and disease-breeding places into new cities of health, life and work.

Measures taken for prevention of disease and protection of public health are absolutely identical, and as one is furthered so is the other fostered, because, if precautions that scientific medicine gives are to be successfully carried out, it is necessary to have the support of the public. The results for the public health, through prevention of disease, can only be obtained with the help of those outside the profession who are educated or who have been sufficiently instructed in the causes of disease. While ignorance of real scientific facts exists among the people, there will always be resistance to any legislation which seemingly curtails personal liberty.

Limitation of personal liberty in America meets with resistance from all classes and especially from those who are ignorant of the fact that such limitation by law is for the good of the majority. This is shown in many ways by the disregard for law and, often, disrespect for those in authority. It is depressing to feel that lawlessness has become an evil in our American life and has produced such results that each vocation and profession has to carry its share of extra burdens.

Existing reasons for considering this subject at this time are:

(1) National. The bill introduced into Congress by Senator Robert L. Owen, of Oklahoma, provides for a concentration of all bureaus dealing with vital resources—a National Board of Public Health.

(2) Local. The marked activity of those who may be termed theoretical anti-sanitarians and objectors to any legislation to protect the public health.

First, National. Leaders for higher standards in any vocation and those who urge stricter laws of government curtailing the personal liberty of the individual for any cause, even for the safeguard of the many, become more or less unpopular and in consequence resistance is quite natural. The animosity in general at the present time against the medical profession and its largest representation, The American Medical Association, may thus in part find explanation. The American Medical Association, with its state and county branches, have been the factors in putting better health laws upon the statute books and in the production of better qualified men and women who are practicing the healing art. It is natural that those who are hurt or generally disqualified should strengthen their opposition by adding to their number the misguided and ignorant, forming themselves into a league of so-called "medical freedom."

It is a well known fact that the thoroughly trained and well educated along all scientific lines make no complaint of injustice or infringement on their individual liberty or rights as citizens. There is no question that the medical profession, as has been stated, has not been treated with courtesy or fairness by those people allied with the so-called "League for Medical Freedom," and who are against a National Board of Health, because abuse and lies have been hurled at the profession from various sides, with the object of increasing any unpopularity that already exists. On the other hand it is well known and can safely be upheld that the medical profession has made no attack on any set for its religious or spiritual views, but when any person or set of people offend the general welfare or cause the breaking

down of barriers protecting the public health, an attack by the profession must be made if it is to be true to its vocation.

Added to the anti-sanitarians and those who disregard infectious and contagious diseases, there are the malicious objectors, who wish a continuance of existing conditions for selfish purposes. The more discussion on this subject, the more publicity given, the greater understanding produced and the more questions asked, the sooner will the people learn and the public know the advantages. Only through instruction of the individual and education of the ignorant will such a bureau become a reality.

Those responsible for the government of the United States can be trusted to conduct a national department of health honestly, squarely and broadly, just as they are trusted to carry on other departments of the government.

In a message to Congress, December, 1910, President Taft says:

"In my message of last year I recommended the creation of a Bureau of Health, in which should be embraced all those government agencies outside of the War and Navy departments which are now directed toward the preservation of public health or exercise functions germane to that subject. I renew this recommendation. I greatly regret that the agitation in favor of this bureau has aroused a counter agitation against its creation, on the ground that the establishment of such a bureau is to be in the interest of a particular school of medicine. It seems to me that this assumption is wholly unwarranted, and those responsible for the government can be trusted to secure in the personnel of the bureau the appointment of representatives of all recognized schools of medicine, and in the management of the bureau entire freedom from narrow prejudice in this regard."

Our national, state and county medical societies all stand for the protection of public health and for any measure that will best attain this end. None of these measures are concerned with the treatment, or with any school of so-called treatment, and Senator Owen's bill has nothing whatever to do with the treatment of disease.

The federal government or Congress has no jurisdiction whatever over the practice of medicine in the several states. Any belief or faith in sectarian medicine, cults or fads for the treatment of the sick cannot be interfered with through the creation of a National Board of Health. Freedom for treatment of disease may be as great as ever and each state should settle that question for itself. Anyone should have the right to select whom he chooses to treat his case, provided, however, that such a person has been licensed in the healing art by the state in which he resides. Limit only the right to care for the sick, irrespective of any school of healing art, to those who have sufficient knowledge and the necessary training to safeguard the patient and the public.

The enforcement of a state law regarding the qualifications of practitioners of the healing art is of the greatest possible importance, the neglect of which produces poorly educated and inadequately trained sectarian physicians who practice and trade upon the reputations and higher qualifications of others. This is now left to the State Board of Medical Examiners and will not be changed by the creation of a National Board of Health.

Second, Local. The marked activity of Christian Scientists and others who compose the so-called "League of Medical Freedom," not only on account of their anti-medical views, but also because of their political activity in relation to the physical inspection of school children, thrusts upon this Society an obligation to inform the public of its danger.

The study of the mind and its complex operation has been really neglected by medical colleges and continues to be disregarded by the profession, chiefly through lack of training and example from the older practitioners; such and like evils are neither sufficiently recognized nor remedied, with the result that much treatment is left to reformers or irregular healers. *When physicians are consultants for both mind and body, there will be no need of Christian Science or allied false science.* A belief or faith that brings improved conditions of health to a suffering individual, or makes a nervous invalid feel strong and well, deserves our careful and serious consideration. That Christian Science can do this for many who embrace its faith, none who have conscientiously considered the matter will deny. Faith is the dominant note that produces the harmony and may be simply regarded as the natural attitude which, as such, enters into all modern, scientific psychotherapy. As conscientious men and women of the healing art truly understand this and live it through their actions, thoughts and words, their patients need never lack for the sympathy and help now sought through irregular channels. *More spiritual and moral uplift, and less materialism through example of living, are needed among us, that a greater faith and trust result.*

Mental and Christian Science, Faith Cure, Spiritual Healing, Lourdes or St. Anne de Beaupre accomplish similar results under like conditions and methods. That science and religion can work together for the prevention of sickness, distress and suffering, no man or woman of the healing art can deny, but a religion that refuses the help which science has discovered through scientific and unselfish investigation of the cause of disease, is forever a hindrance and menace to the prevention of disease and suffering humanity.

This question of Christian Science should not, perhaps, be taken too seriously, for the people may well be trusted to do in time what is right for the general good, but inasmuch as one of our United States Senators (unfortunately) from our own section, Senator Works) has taken so prominent a part in this discussion, it is right for this Society to have taken action.

As an illustration of what may be accomplished by united action on the part of the profession may be mentioned the fact that in a signed statement issued by Mrs. Craig and Mr. Blight a day or two before the election, they say that they "favor the strict observance of sanitary and quarantine regulations, and of proper measures for the prevention of the spread of contagious diseases," and that "the board should devise and maintain such inspection

of the children and the conditions in the public schools as shall protect the well child and be of the greatest assistance to the ill or defective child." They add that they "favor an investigation of the operation of medical examination in the large cities of the country so that we may adopt the best methods in use in other cities . . . that we may bring up our department of health and development to a high state of efficiency."

Public Health Work to be More Effective.—Our national association before and during its meetings each year has inaugurated a series of health lectures and addresses for the general public. These were begun last year at Los Angeles and many citizens of this county learned much of real value about the prevention of disease and keeping one's health by the right way of living. To augment this, a section of this Society should be started, with meetings once a month, to include all those laymen and women who are working for the physical welfare of this community. Certain members of the Young Men's and Young Women's Christian Associations, the Housing Commission, settlement workers, school teachers, tuberculosis societies and all social workers should be included. A special or modified membership could be given, so that these workers in the field of the prevention of disease might feel themselves a part of, and in sympathy with, the medical profession in so far as the work relates to public health. Such a plan was suggested in the chairman's address in the Section on Preventive Medicine and Public Health of the American Medical Association in Los Angeles last June. He says: "Every county medical society should inaugurate sections to take up different divisions of welfare work and should give a modified membership in their society to all local workers for physical welfare."

Under social work is included church societies, non-sectarian associations, or any organization that assists in helping people into better conditions of living. Such work is closely allied to medical and health work, and all medical work is akin to sociology. The problems of each can best be solved working hand in hand. This complex modern life, to be made more livable and homelike through the coming era of modern medicine, will work out plans through social and medical science, both of which must work together for the right solution.

The life of such a social section of the Society would then be increased by having, at stated intervals and during meetings of our State Society, public lectures and addresses on matters pertaining to public health, given by both physicians and laymen. Money would be needed to undertake such a programme in so far only as a salaried man would be necessary to direct and form the programme. Sufficient professional men could be obtained for giving these lectures and addresses without remuneration, but it would doubtless be necessary to have a salaried man to attend to the details. This County Society could well afford to start such a series for the good of our community.

Through this section additional support would be given the county and state societies in putting out of business the large number of unlicensed practitioners who practice in defiance of the law, and those licensed hypocrites who are breaking the laws of God and man by illegitimate practicing as was brought out by Mr. Morrow, attorney for the State Board, at our recent meeting.

The profession is too busy with its daily duties and care of the sick to do that which is necessary to bring the correct information before the public. Everyone finds individuals hungry for the truths of medical science and of measures for the prevention of disease. Even the one fact that there is nothing whatever in the Owen Bill which relates to the treatment of disease or to any school of medicine, has added to the names of those in favor of a National Board of Health many who by a wrong interpretation had misunderstood the truth. We can thus do much as individuals, but, as an organization, a salaried man must be secured to properly conduct any campaign. In this regard there is a constantly growing demand for professional men to assume prominent positions in health matters, and it will doubtless be necessary for medical schools to create a department of instruction in public health. Recognizing this demand, instruction leading directly to the position of health officer is now given at many of our leading universities, i. e., Harvard, Columbia, Ann Arbor, Wisconsin and Pennsylvania, with other universities preparing for these courses.

The great mass of people must by force and authority of law be educated into hygienic living and obedience to sanitary regulations. It is unfortunate that the majority of our city boards of health are handicapped by lack of authority to enforce their laws and lack of funds for pushing the necessary work of prevention. A standard set by a National Health Board would help the situation of every state and city board.

The American people can be trusted to do the right thing when the proper time comes. What is right must prevail and what is truth will endure from whatsoever source right and truth may come. It is our duty, therefore, to continue a conscientious campaign of instruction and education for that which, through scientific training in the causes and prevention of disease, we believe is for the public good and welfare.

More Effective Organization of the Profession.—We have heard much this past year about better organization of our profession. This has come not only from medical sources, but from lay brothers who can well be trusted and who know something of the value of the work done by medical members. Certainly we do not need to organize, but to make our present organization more effective through the development of our local societies, the functions of which might be stated as follows:

First. To unite with members in harmonious fellowship.

Second. For scientific discussions; papers expressing the clinical experiences of each, giving any new facts; the presentation of cases or pathological specimens, and as such, the Society stands for the highest clinical institution in the form of a post-graduate course.

Third. Developing its home and its home's appointments.

The functions of the first and second groups have been performed continuously since the foundation of our Society forty years ago, more or less successfully, as its officers and members have shown interest and given of their best thought. Unquestionably much progress has been made in the last three years, and with the enthusiasm and inspiration of the young, well-trained members, a bright future for harmonious fellowship and scientific work seems assured.

It is the third function, that of its home and appointments, I wish to emphasize. The home has certainly been neglected. The Los Angeles County Society should own its building or rooms which at any time might be extended as money is provided. Many societies and organizations of this city which are mere infants compared with our Medical Society, have each at the present time their own home and equipment, and yet do not clothe, feed or protect their members as a home of this Society could do. The special appointments of the home referred to are: access to a medical library and museum. Where the Society has its home there should the library be situated, as a medical library is the most important asset of a growing and united profession or society. As the library has been earlier developed, the home of the profession should have close connection with it. Discord, mistrust and jealousy must be put aside to attain what is best for the greatest number and for the highest development of a medical unit in Southern California. The time has come for us to make the best use of what has been already planted here by uniting to the Medical Society that which will add to its dignity and usefulness.

The other appointment referred to is a pathological museum. A good beginning by the profession here has been evidenced by the receipt of the first prize last spring given by the American Medical Association. Through an adjoining building to the home a compact group could well be made of the three buildings, namely: society rooms, library and museum, of which the members of this Society could well be proud, and in which the profession of the West with envy would rejoice.

Many advantages that seem at first luxuries become in time actual necessities. This is true in the commercial life as well as in the professional life. For this Society to-day to have easy access to an indexed library or pathological museum, would safely be thought advantageous, and to-morrow for it to be deprived of either would actually interfere with its very soul and life.

Holmes in one of his essays put it thus: "Our practitioners need a library—for with all their skill and devotion there is too little erudition such as a liberal profession should be able to claim for many of its members. They must clear up this unilluminated atmosphere and here is the true electric light which will irradiate its darkness."

Colleagues, this can be accomplished in a short time through unanimous agreement, and by burying the smallness of opposition that may arise through individual jealousies or prejudices, an accomplishment that would please and prosper the future members of this Society, and attainable with less expense to our present members, because the state has already committed itself to help and further the interest of medical education and the profession of this section, in so far as the people and medical men of Southern California show their strength of purpose toward that end. All effort for others, advantages and help given to our brothers here now or to those who come after, bring the greatest satisfaction and pleasure and make this short life worth the while.

I wish to extend to each member of this Society best wishes and appreciation for their attendance, support and loyalty at the meetings, especially to those who have attended to and made the scientific programs a success; to the members who gave the series on the History of Medicine, and to those who presented each month the Current Literature; to the Councilors, my gratitude for attendance at meetings, and for timely aid as needed in conducting the business affairs. To the man who by unceasing, unselfish, untiring and constant toil has developed this Society, its progress, its Bulletin, and the best that it stands for to-day—Dr. Kress, our secretary —my thanks and appreciation are gladly acknowledged.

Members, as President I bid you farewell and God-speed.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

ADDRESS OF DR. OPHULS, PRESIDENT.

Annual Meeting San Francisco County Medical Society, December 12, 1911.

At the beginning of my presidential address, it is my pleasant duty to express my great and most sincere appreciation to the Board of Directors and to the members of the San Francisco County Medical Society for electing me to fill this most important office in the Society. I shall always look back upon this year with the greatest pleasure in view of the most cordial and effective support given me by the Society at large, more especially by those who undertook the often arduous duties on the different standing and special committees and by the individual members of the Board of Directors, without which splendid support it would have been impossible to accomplish anything.

The Society hardly appreciates fully the amount of detail business which the Board of Directors have to dispose of for them, and if they confer an honor upon them by electing them to this responsible position, they at the same time owe them a deep debt of gratitude for their earnest devotion to the interests of the Society.

The other officers, standing committees and commissions of the Society will furnish separate reports. Still it would be hardly just on my part if I should not mention the splendid work performed by all of them, and enter into some detail in regard to some of the more important points that happen to be more strongly impressed upon my mind.

First of all I wish to speak of the untiring labors of our Secretary. To him more than anybody the success of last year, if there be any, is due. He has continued his able efforts to put the affairs of the Society on a sound financial basis by his untiring energy in collecting dues and by his systematic and successful campaign for an increased membership. As you will observe from his report, his labors have not been wasted, and so far as an increase in membership is concerned, have been crowned with the most gratifying result.

In his work he has enjoyed the hearty and effective co-operation of our Executive and Finance Committees. The Finance Committee has given its time unsparingly and the Society may rest assured that nothing has escaped their watchful eye. I believe, however, that at present the responsibility which rests upon the Finance Committee is heavier than the Society has any right to impose upon them. In closing up their affairs annually they should be granted the assistance of a paid public accountant in order to relieve them of a mass of detail which they cannot master entirely and in order to give proper discharge to the Secretary.

I think I may state with confidence that our scientific meetings during the last year, as well the general meetings as those of the sections, have had an unusually large attendance, for which our first thanks are due to the Executive Committee and the officers of the sections, through whose co-operation the delightful programs were made possible, that we had the pleasure of enjoying. We have also had some interesting special meetings. I wish to refer especially to the evening when two distinguished visitors from the East, Dr. Harvey Cushing of Baltimore and Dr. Crile of Cleveland, presented their masterly addresses and when we had the pleasure of having with us Dr. Wm. H. Welch of Baltimore.

Last summer has been an especially interesting one from a medical point of view on account of the many Eastern visitors who passed through San Francisco in connection with the meeting of the American Medical Association at Los Angeles.

Some criticism has been heard in regard to the prolonged discussion of a therapeutic measure of still doubtful value. I personally hope that the Society will always remain an open forum for matters in which a considerable number of its members take a strong interest, and the more seriously and thoroughly such a discussion is gone into, the better it will be for all concerned. I believe that untold harm must come from a too narrow limitation of the subject matters to be discussed by the Society or in the selection of those who shall present them for discussion.

The success of our section meetings has amply demonstrated the value of having weekly meetings. I also feel that the exchange of program with the Alameda County Medical Society was a step in the right direction. Everything possible should be done to bring the members of the medical fraternity in the cities around the Bay into close personal contact. It is only in this way that we learn to know and to appreciate one another fully and to stand united against the many evil influences from the outside.

Your Committee on Medical Legislation has had a hard tussle with these same sinister spirits, and in spite of their vigorous efforts, the Medical Law was amended against their wishes and a vaccination bill was passed, the efficiency of which remains to be tested by the future, but there are grave doubts in my mind whether the compromise effected by the guardians of the health of this state with the Legislature was in the nature of progress. Only those who have served the Society in this capacity can fully appreciate the difficulties of the task of this committee.

Those of you who avail themselves of the privileges of our library will have noticed with pleasure the many improvements made and will join with me in expressing their best thanks to the Librarian and to our Library Committee.

Of social events in the course of the last year, I have to record two: the smoker in honor of Prof. Fuchs of Vienna, the Lane lecturer of the last year, and the dinner in honor of—well, never mind whom. The delightful evening with Prof. Fuchs, we owe to a large extent to the initiative of our Eye, Ear, Nose and Throat Section. There were many guests from all over the state and it is to be hoped that they enjoyed our hospitality in the same spirit in which it was offered. The dinner was well attended. There were over 100 members present, and thanks to the labors of the Entertainment Committee and especially its chairman, Dr. Kugeler, it was an unqualified success.

The requirements formulated last year by your Committee on Hospitals and Contract Practice were adopted by the Society and the Hospital Commission was established. It has gone about its work in a thorough and conscientious manner, and although much remains undone, a basis has been laid from which many important results may develop in the future.

Another very important step was taken in the appointment of a Committee on Publicity. It is to be hoped that this committee will be transformed into a permanent commission to gather the necessary materials and to aid in the dissemination of useful information to the public on matters medical. Under any form of government, but more especially under the one which we are enjoying, the education of the public must be the first effort in the line of progress. We can never hope to accomplish our desires in regard to public health and individual hygiene, upon which after all the success and well being of our community depends in the long run without the backing of a strong and well advised public opinion.

I also wish to reiterate the recommendation made by our last president, that in order to assure stability in the administration of our affairs, the Board of Directors serve for two years, one-half of the members being elected one year, and the other the next.

The question of renting meeting and office rooms from the Trustees of Leland Stanford Jr. University and of our placing our library in the same

building was fully discussed by a special committee consisting of Drs. W. W. Kerr, Dudley Tait, P. M. Jones, R. L. Porter and Chas. G. Levison. A statement in regard to the matter was submitted to the members of the Society. A large majority of those who answered expressed themselves in favor of the proposal. Replies were received from about two-thirds of the membership. In spite of this expression of opinion, the Board of Directors decided to lay the matter on the table, largely because there seemed to be some fear that the Society was unable to meet the requirements of the contract which was proposed, financially. I believe that the question is not solved finally. The Society needs better accommodations for its meetings, its offices and for the library. The placing of the two libraries in one building and the creation of a medical center in San Francisco would be of inestimable benefit to the profession. So far as I can see, the necessities of the Society could not be met by any other scheme on more advantageous terms, and I personally am still strongly of the opinion that at some future date the logic of facts will convince even the most conscientious objector, and no doubt an arrangement can then be made which at the same time would satisfy any demands which the Society can justly make and give the profession what it needs, a large collection of medical literature under one roof administered independently, if you will, to common advantage.

I also wish to call the attention of the Society to the existence of a considerable fund for the benefit of its own library. We have in our possession a capital of $8,000 originally given for relief purposes, which on July 14, 1913, when it will have increased to $10,000, becomes available for library purposes under the direction of our Board of Directors. The use of the fund is limited by its donors to this purpose. The income from this fund together with what the Society can appropriate for the library will put our library in a very good financial condition. It will not suffice, however, to build up a great and comprehensive medical library which by itself could aspire to that degree of completeness which the student of medical literature can justly demand.

In conclusion, I wish to express again my most heartfelt thanks for the great honor which you have conferred upon me and for the many pleasant hours which I have been privileged to spend with you in my capacity as presiding officer.

WM. OPHULS.

SECRETARY'S REPORT FOR 1911.

Mr. President and Members of the Society:

As Secretary I beg leave to submit the following report for the year 1911—i. e., from December 10, 1910, to December 10, 1911, inclusive:

Number of members in Society Dec. 10, 1910	477
New members admitted	52
Resigned	2
Transferred to other county societies	5
Died	6
Expelled	1
Dropped for non-payment of dues	1
Reinstated after payment of dues	34
Number of members in Society Dec. 10, 1911	548

It will be noted that we have 71 more members in good standing than last year. In spite of continued efforts on our part, it is most difficult to make members understand that dues are payable in advance and not at the end of the year. For this reason the balance on hand is of necessity quite small. From members in good standing there is a balance due the Society of $858.50. Most of this will undoubtedly be collected very late this month or the early part of January. We have prepared an amendment to the By-Laws upon which the Society will vote next month which we hope will be effectual in compelling members to pay their dues as they should. Taking all in all, the Society is on a good sound financial basis.

FINANCIAL STATEMENT, DECEMBER 10, 1910, TO DECEMBER 10, 1911.

Receipts.

Balance on hand Dec. 10, 1910	$ 498.30
Collected from members and rental of Library	6,484.05
Total receipts	$6,982.35

Disbursements.

Rent	$1,240.00
California State Med. Soc., in lieu of exchanges	180.00
Salary of office assistant	721.50
Secretary's salary and bond	205.00
Laundry	18.00
Library Bills	436.57
Printing (envelopes and stamps for Soc. and Committees)	583.56
Telephone	133.60
Hospital Commission (Attorney's Fee)	125.00
Committee on Necrology (engraving for annual report)	12.00
Assessment to State Society	2,229.00
Incidentals (water, rent safe deposit box, insurance on library, taxes, entertainment, rent of hall for Crile meeting, experting 1909 secretary's books, Com. on Poliomyelitis, housing Commission, etc.)	234.70
Total	$6,118.93
Balance on hand	$863.42

The Society owns furthermore, 5 San Francisco North Pacific bonds, expiring January 1st, 1919; also 3 North Pacific Coast Railway bonds, expiring January 1st, 1912. The accumulated interest of this fund amounted to $1,233.17 on July 1st, 1911, this money being on deposit in the Savings Union Bank of San Francisco.

The following is a statement of the monthly receipts and disbursements of the Society since December 10, 1910, when I filed my last report, up to December 10, 1911:

	Collected.	Checks Pd.
Balance Dec. 10, 1910..	$ 498.30	
Dec. 10 to 30, 1910...	247.60	8.40
January	194.00	577.85
February	1,190.00	311.25
March	432.50	739.59
April	144.00	268.70
May	514.75	721.89
June	353.00	371.70
July	1,353.80	706.50
August	451.40	221.75
September	350.00	342.16
October	565.00	1,256.79
November	451.50	342.30
Dec. 1 to 10.....	236.50	250.05
	$6,982.35	$6,118.93
Balance on hand...	$ 863.42	

Respectfully submitted,
RENÉ BINE.

By December 31, 1911, we will be called upon to pay about $300 outstanding bills; also $250 of the 1911 library bills.

Report of Librarian.

During the current year 425 books have been added to the library, making a total of about 5,000 volumes. We are now receiving 150 American journals and 50 foreign publications. The policy of your librarian has been the development of a working library, in no sense a competitor of the more important and indispensable Lane Library. Hence, our co-operation with numerous other medical libraries in view of completing our valuable domestic and foreign files. With a slight additional yearly allowance the Library Committee will be able to supply the sections of Urology, Otology and Ophthalmology with adequate reference material. Later, it may be possible to provide the members of the Society free of charge with a library assistant trained in bibliographical research. A not inconsiderable portion, almost half, of the year's allowance was devoted to the proper binding of files. Better lantern facilities will be available at an early date.

Dudley Tait, Librarian.

Report of Committee on Admissions.

To the Members of the San Francisco County Medical Society:

The Committee on Admissions, consisting of Drs. Alderson, Alvarez, Culver, Hyman and Rumwell, beg to report that during the year they have passed fifty-two applicants for membership and have rejected one applicant.

Respectfully submitted,
Harry E. Alderson,
Chairman Com. on Admissions.

Report of Chairman of Executive Committee.

To the President and Members of the San Francisco County Medical Society:

The Executive Committee has during the past year attended to its duties to the best of its ability and has endeavored to prepare programs of interest to the members by exercising a supervision which would be just and equitable to all.

We are proud of the interest taken by the Society in the Section plan of holding meetings. We believe that all now realize that the business meeting and literary program of a society as large as ours cannot be adequately handled in one meeting per month and that the present plan, founded on that of the New York Academy of Medicine, is far superior.

There is one phase of this question which I want to bring before the Society and I wish to urge the incoming Board of Directors and Executive Committee to take due notice of it. I have found a great unwillingness on the part of many members to appear at any but the general meeting, their idea being apparently that a better audience will be present at the general than at the section meetings. This has sometimes put the Executive Committee in embarassing positions, making it necessary to seem to favor some of the members over others. Unless some remedy is found for this trouble the section meetings of the Society will not long endure. One would suppose that pride in the success of the section would impel its members to gladly bring their best work before it and I am glad to say for the credit of the surgeons that this has been the case with the members of the Surgical and Urological Sections and the Eye, Ear, Nose and Throat Section.

Strangely enough the physicians have as a rule refused to appear before the Medical Section, and I now recall but two who have requested permission to do so while many have strongly insisted on being assigned to the General Section.

It would, of course, be ridiculous to abolish the Medical Section and turn over the General Meeting to the internists. I suggest that a rule be enacted to the effect that the General Meeting shall be reserved for the business of the Society, entertainment of eminent visitors and reports of committees. The President can, if necessary, appoint committees on subjects of general interest, such as the Committee on Anterior Poliomyelitis appointed by Dr. Porter. These committees can give their reports at the General Meetings, and the special papers submitted can then be assigned to the section to which they belong.

Should this rule be adopted, I feel certain that the success of the section plan is assured, and it will then no longer be necessary to import speakers from Berkeley and Palo Alto to fill the program left vacant by the members of the Medical Section.

Respectfully submitted,
Lewis Sayre Mace,
Chairman Executive Committee.

Report of Finance Committee.

Mr. President and Members of the San Francisco County Medical Society:

The Finance Committee wishes to report that it has held monthly meetings and has signed all the vouchers; accounted the books of the secretary-treasurer and found everything in order.

The committee recommends on the advice of

competent business men, that the three North Pacific Coast Railway bonds (January 1, 1912,) be allowed to mature and that the principal and accrued interest on them, and on the other bonds (five San Francisco North Pacific bonds), be re-invested. (Accrued interest, $1,233.17.)

Respectfully submitted,
JULE B. FRANKENHEIMER,
Chairman Finance Committee.

REPORT OF COMMITTEE ON MEDICAL ETHICS.

Mr. President and Members of the San Francisco County Medical Society:

Gentlemen:

The Committee on Medical Ethics has the honor to present herewith the report of its activities for the past year.

In January a charge of unethical conduct involved in certain offensive advertising in the daily papers of San Francisco was preferred against Dr. H. G. Martin, a member of this Society, by its Secretary, Dr. Bine. The only answer to the charge was a letter from Dr. Martin disclaiming the jurisdiction of the Society to pass on the ethics of his conduct, accompanied by his letter of resignation. By unanimous vote of the committee it was recommended that Dr. Martin be expelled from the Society.

In the same month an anonymous letter was received, signed "A Member of the Same Society," complaining of the presence of a simple professional card of Dr. Jos. Ardenyi in a daily paper. As there was absolutely no ground for the complaint, it was suggested to the Secretary, that by a brief communication to be printed in the Society's monthly bulletin setting forth the inoffensiveness of a card of this character, any critic would be reassured.

In May, and again in November, communications were received from the Secretary, transmitting complaints of the offensive and misleading nature of certain advertisements appearing in Italian, in certain local Italian dailies, inserted by Dr. A. De Lucis. A letter to Dr. De Lucis resulted in a call by him upon the chairman of this committee.

The doctor earnestly deprecated any intent to mislead or misrepresent through the advertisements and volunteered to so word them that no fault be found with them. The second complaint from the same source, accompanied by a clipping similar in all respects to the first, was proven by Dr. De Lucis to have been taken from an issue of about the same, or a date previous to the one first complained of. The advertisements which he had been running since the first complaint contained nothing of an offensive character.

Respectfully submitted,
JOHN C. SPENCER, Chairman.

REPORT OF LIBRARY COMMITTEE.

To the Members of the San Francisco County Medical Society:

The work of the Library Committee has of necessity been limited to one or two meetings, for the reason that the policy of the Society in library matters is already well defined and the monetary allowance restricted. On the whole the journal-list of the preceding year has been maintained and some of the more important journals have been bound. This side of the work will undoubtedly be covered by the Librarian's report.

Two matters have come up for discussion during the year. The first relates to a communication from the Eye, Ear, Nose and Throat Section asking for an appropriation by this committee for a sum of money for special journals relating to its special field. The committee did not feel that it could do anything in this matter this year for the reason that the budget allowed by the Finance Committee was just enough to cover the current expenses of the present journal-list which even now by no means covers the fields of general interest.

The second matter relates to a proposition made by Dr. Millberry in the name of the Dental Society of this city, whereby this Dental Society would keep its journals in our library. The details of the plan would have to be worked out. We believe that this general proposition should be taken up with the Dental Society at the beginning of the next year. Apart from any financial gain to our Society, an arrangement of this kind might tend to cement more closely the common interests of both organizations.

AUGUST JEROME LARTIGAU,
Chairman Lib. Committee.

REPORT OF THE COMMITTEE ON LEGISLATION.

At the last session of the State Legislature various medical bills of all kinds and sorts were introduced in both houses. Bills defining the practice of medicine; providing fines for illegal practitioners; for the appointment of a board on mechano-therapy, and others of even lesser import. These serially met defeat. Realizing that the appointment of any board by the Governor would always appeal to the political mind, Senator Hurd introduced a bill (Senate Bill 875), providing for the appointment of a board of medical examiners by the Governor; also, providing for the issuing of three forms of certificates; one for the practice of medicine and surgery; one for the practice of osteopathy; one for the practice of any other form of medicine; also legalizing the practice of an Oakland quack of thirty-five years' standing in deception. Although we had the best reason to believe that this bill would never become a law, even though passed by both houses, nevertheless, contrary to our expectations, the Governor signed the Hurd bill and it is now a law of the State. However, the Governor has never taken advantage of the opportunity afforded him to appoint a new board, preferring to allow the board selected by the respective medical societies to continue in office. The law as it now stands is not in accord with the opinion of the profession, and a determined effort must be made at the next regular session of the State Legislature to have it so amended that it will be once more in harmony with the best interests of the public.

Respectfully submitted,
F. B. CARPENTER,
Chairman Committee on Legislation.

Report of Committee on Banquets.

This committee, composed of Drs. Kugeler, Alderson, and Bine, was appointed early in March by President Ophuls. Under its auspices the Society held its annual dinner on the 21st of November. Through its Secretary, the committee wishes to make the following report:

Over 100 members attended the banquet which was held at Techau Tavern and which, thanks to the efforts of Dr. Kugeler, was a very great success.

A rumor had been circulated that a distinguished Russian scientist would attend the dinner and much curiosity was displayed and many of the members expressed desires of being introduced to the famous foreigner, who, somewhat late, entered the room, and took his seat between the President and Secretary of the Society. Dr. Kugeler, somewhat later, introduced the genial physiologist, who read a rather comical pseudo-scientific paper, and then to everybody's surprise offered to sing in appreciation of the reception accorded him by the Society.

Needless to say, they all "bit." The entertainer hired for the occasion did his work well and it was only when his song descended to the modern American level that the majority of the members realized that they had been hoaxed.

During the course of the evening, members were further entertained by Supervisor-elect Caglieri, Langley Porter, (who pretended that he had come in the interests of the League for Medical Freedom), Wm. F. Cheney, J. W. Shiels, (whose play we hope to publish in an early issue of the Journal), J. Dennis Arnold, V. G. Vecki and Rene Bine, who as secretary pretended to read papers presented by members of the Society.

After last year's banquet the Society was obliged to make good a deficit of $25.00. The Committee on Entertainment this year is pleased to report that the Society will probably receive from it a surplus of several dollars.

Report of the Medical Milk Commission.

It is with much pleasure that after five years' connection with the Certified Milk Commission of this Society, I am now able to give you the present report of its progress.

The affairs of the Commission were never more flourishing. Five years ago when we met to organize the Commission, we had the promise of 190 subscribers, each of whom agreed to take a quart of certified milk daily, provided some one could be found who would on this slender encouragement, be willing to undertake its production. You have been informed in previous reports that Mr. F. V. Nelson of this city dared to engage in this business of certified milk production against the advice of his friends and business associates. How he developed his ranch through the many difficulties of experimentation with which the pioneer is always beset, until with an output of over fifteen hundred quarts a day, he had proved to all that his confidence in the Commission and in the future of pure milk had been well founded, you know. I believe that the medical profession and all interested in the pure milk problem are tremendously indebted to Mr. Nelson for what he has done.

We have two other certified milk plants in operation besides the original one. H. R. Timm of Dixon followed shortly after Mr. Nelson and now produces over 2100 quarts daily. The Hutton Bros., also of Dixon, are gradually building up a well-paying plant of about 100 cows. Mr. Herzog has recently taken over the original certified plant known as the Ideal Farms and is turning out the same product under the name of Sleepy Hollow Ranch.

During the year it has been necessary to make some changes in the methods of paying our experts. Part of the product of dairies certified by us is sold on the other side of the Bay and must bear the certificate of the Alameda County Commission. Formerly we paid our own experts, collecting from the dairies a pro rata according to the amount of milk certified. But the double certification made this plan so cumbersome that now by an agreement with the Alameda County Commission, a single set of reports is accepted by both Commissions and the experts are paid according to the services rendered directly by the dairies.

The expenses of the Commission are paid by a charge of $1.25 per thousand for the certificates.

We have held several meetings with the Alameda Commission for the purpose of conferring as to ways and means for improving the service. Much good has come of these meetings and I think that we shall find that a closer association with the Commission across the Bay will be necessary.

The Society has very wisely decided that the Commissioners shall be elected for five years, one new member being appointed each year. Our younger members have been a most welcome addition to the Commission, bringing a new fund of enthusiasm and willingness to work possibly needed by those to whom the constant routine has become more or less monotonous.

The Commission has been fortunate in having the valuable services of Dr. Geo. S. Baker and Nathan Moran, Esq., as lay members. Dr. Geo. S. Baker, Inspector in Charge of the U. S. Bureau of Animal Industry, has been most faithful in his attendance at our meetings, and most generous with his expert advice and no small amount of our success has been due to his wise counsel.

The Commission, in conjunction with the Alameda Commission, sent Dr. Baker as a delegate to the meeting of the American Association of Medical Milk Commissions in Philadelphia in April of this year and we have all felt that the investment was well repaid by the fund of added interest which he brought back to us.

Whenever legal questions have arisen in the transaction of our business, Mr. Moran has been kind enough to assist us with most valuable advice and the thanks of the Society are most certainly due him.

A report from the Medical Milk Commission would be incomplete without an expression of thanks to Dr. Adelaide Brown, whose faithful and earnest work as Secretary has been the principal factor of our success.

The Society will be interested to know that during the year seventeen regular and special meet-

ings have been held. In addition to attendance at these meetings, monthly visits have as a rule been made to each of three dairies by members of the Commission serving alternately.

The value of the investments in certified milk plants now directed by us may be conservatively estimated at $350,000. About 500 milk cows, tested and examined, are producing 3,900 quarts of milk daily.

During the current year the cash receipts of the Commission have been $2,674.08 and the disbursements $2,372.25, leaving a balance of $301.83.

Respectfully submitted,

LEWIS SAYRE MACE, President.

MEDICAL SECTION.

Mr. President and Members of the San Francisco County Medical Society:

The Medical Section has held monthly meetings except in June, and apparently the programs have been interesting and pleasing to all.

Respectfully submitted,

Chairman Medical Section.

SURGICAL SECTION.

The attendance and class of work presented at the Surgical Section during the second year have demonstrated the wisdom of dividing the Society into sections and also the benefits accruing from occasional joint meetings with the other sections.

We strongly urge enforcement of the rule requiring the posting of papers in the library one week prior to their presentation. This rule has been the means of improving the character and extent of the discussions and has even produced some interesting prefatory remarks.

DUDLEY TAIT, Chairman.

UROLOGICAL SECTION.

A preliminary meeting of the organization was held in April, 1911, when the section was organized. Dr. M. Krotoszyner was elected Chairman and Dr. W. P. Willard, Secretary. It was decided to hold section meetings on the fifth Tuesdays of those months in which the calendar showed five Tuesdays.

Meetings were held on the fifth Tuesday in May, August, and October, and one meeting was held on the first Tuesday in December in connection with the section on Internal Medicine. There was a full program presented at each meeting and an increasing attendance of members was noticeable.

Respectfully,

MARTIN KROTOSZYNER, Chairman.

EYE, EAR, NOSE AND THROAT SECTION.

I wish to report a very prosperous year. At each and every meeting we have had a well written paper that was worthy of the effort in every instance. We have also had two or more cases presented at every meeting for observation and diagnosis. During the year we have had Professor Fuchs with us, one of the greatest celebrities of the age in ophthalmology. Docent Dr. Frey has also been with us, and no doubt we have all been benefited by his stay in San Francisco. The attendance among the specialists themselves has been poor. I do not know how to account for this and will only comment that those who have remained away have been the losers. The attendance of the general medical men has been reasonably good; this very attendance should stimulate every Eye, Ear, Nose and Throat man in San Francisco to something better. I wish to recommend to the incoming President that one of our number be put on the Library Committee so that we make a beginning of a library for the Eye, Ear, Nose and Throat community. I would further recommend more earnest co-operation among our own members. It would have a double effect, that on the community at large and it would promote a better fellowship among our own members.

CULLEN F. WELTY, Chairman.

SOME REMARKS ON SO-CALLED "AUTOMOBILE FRACTURES."*

By W. H. WINTERBERG, M. D., San Francisco.

The fact that there is much misconception among both the laity and physicians about just what a so-called automobile fracture is and how it is caused is perhaps excuse enough for bringing before you a subject which has been well worked out and cases of which are becoming less yearly.

When I use the term "automobile fractures"—they are also called chauffeur's fracture, automobile crank fractures—I mean cases of fracture of the lower and usually outer end of the radius caused by the sudden and violent reversal of the starting crank of an automobile—the so-called "kick-back." Furthermore, only those fractures of the radius which are produced indirectly by the force acting through the palm of the hand are meant. Direct fracture caused by the crank flying back and striking the wrist, hand or, what is more usual, the forearm, have no especial interest as they vary greatly as those produced by striking that part of the upper extremity with an iron bar corresponding to the crank handle in size. The type to be described, "the automobile fracture," is a clinical entity and has definite etiology, a characteristic anatomy and distinct clinical features.

Etiology. I feel it not necessary to go into detail why the so-called kick-back takes place. Suffice it to say that under certain conditions—conditions which by the way can almost always be avoided and which the self-starting devices will soon entirely remove—the crank handle while being pushed down is suddenly forced with great violence against the palm in the direction of the outer and lower part of the radius. The hand is twisted backward and abducted and in all typical cases the lower part of the radius is detached. Writers on the subject are not entirely agreed that this is the correct explanation of the action of the mechanical force; and at one time I had in mind to reproduce this fracture artificially, but you can readily understand the difficulties of such a procedure and the idea was given up.

However, I believe the violence is transmitted upward and outward and the hand wrenched in

* Read before the Cooper College Science Club, November 6, 1911.

extension and abduction. One writer believes these fractures to be subperiosteal, but that seems likely only in exceptional cases. Another writer says "the bone gives way before the ligament." I know of no ligament directly involved.

Anatomy. The X-Ray picture in a typical automobile fracture will show a fracture line in the lower end of the radius below the usual site of a Colles' fracture. This line runs either transversely across the bone or what is more common obliquely into the joint. There is no impaction, no displacement and consequently little or no deformity. The styloid process of the ulna which is torn off in nearly 75% of Colles' fractures and but rarely detached, one author says less than 25%. I found but one in ten. The fractures show a remarkable similarity to one another. In the young epiphyseal separation is said to take place, but before ossification (eighteenth to twenty-first year) the fracture can often be seen crossing the epiphyseal line.

Clinical Features. There is as a rule no crepitus, little deformity, swelling, pain or discoloration. The loss of function also is slight, though rather greater than the other clinical symptoms would call for. Gentle motion can be made, forced ones are painful. There is a distinct point of tenderness on the lower and outer end of the radius, and this clinical sign is always present and shows in this fracture perhaps more than any other the value of pressure point tenderness in the diagnosis of fractures. The diagnosis must often be made on the history and this sign alone. An X-Ray to be taken, of course, when possible.

Treatment. Prophylaxis need not be entered into. As a rule the less done the better. Any attempt to improve the slight deformity is unnecessary; in fact, I have been told of a case where it was made worse.

Champoniere has achieved what he calls marvelous results (marvelous as against his results in Colles) by immediate reduction followed by early mobilization. Our cases all proceeded to a speedy and full functional recovery without any manipulations.

Immobilize—after a week, daily massage and motion of joint. At end of three weeks patient generally well.

I will now show a number of plates. First a number showing the typical fracture described and then others of atypical fractures and finally some due to direct force.

Discussion.

Dr. Emmet Rixford: It struck me that of the series of names of this fracture mentioned by Dr. Winterberg the last was the most appropriate, namely, the automobile-crank fracture. The etiology of these and Colles' fracture is very different, the mechanism of production of the fracture is very different as well as the deformity, the clinical course and the prognosis. We all know that the common explanation of the cause of these fractures is that they are due to blows on the back of the wrist given by the handle of the crank when the engine backfires. It is much more probable that the radius is broken in most cases by a blow producing radial flexion (abduction) combined with thrust, while Colles' fracture is the result of hyperextension. Dr. Winterberg mentioned two cases as being mine; they both gave distinct and very clear and very positive accounts of the way in which the fracture was received and both showed a very tender area in the region, especially the one in which the fracture was 3″ above the joint. He was positive that the crank did not leave the hand and he certainly was bruised in the interval between the thumb and the first finger. How does that force produce the fracture? From the direction of the line of fracture it might be described as fracture of the styloid process of the radius. Some of these fractures seem as if they might be produced by excessive abduction. In the Colles' fracture there is no such abduction and the line of the fracture is certainly different in the two cases. In the Colles' fracture the flexion starts the tear on the volor surface. In the case of Dr. Schmoll's wrist cited by Dr. Winterberg there was a very considerable dorsal displacement and we thought the final form of the arm was better for having had some manipulative reduction. In one or two other cases I have seen slight dorsal flexion at the point of fracture; still the dorsal displacement is much less in the automobile-crank fracture than in Colles' fracture.

Dr. W. H. Winterberg: The power of these machines is terrific. In one case the patient told me that when the crank reversed he was thrown over the mudguard of the machine, and it is remarkable that more damage is not done. The point I want to make is that so many of these fractures are trivial. In the literature the great majority of these cases are of the type that I have described and shown here. Dr. Rixford spoke of one case in which there was considerable deformity; in that case both bones were broken. In the cases of the usual type there is little or no deformity.

THE LIPOIDS OF NORMAL, NEPHRITIC AND DIABETIC SERUM: PRELIMINARY REPORT.

By CLARENCE QUINAN, M. D., San Francisco.

Very little attention has been paid to the chemistry of the blood in chronic disorders of the kidneys, although there can be no doubt that a peculiar and at times very remarkable turbidity of the serum is characteristic of nephritis. An extended chemical study of many specimens of this serum has made it evident that the altered appearance is due to an absolute increase in certain of the fatty or lipoid constituents. It will be seen, by consulting the tabular data included herewith, that, comparatively speaking, the lipoid value is a large one and that it ranges within wide limits. From the practical standpoint the examination for lipoids, fortunately, is one that presents no great difficulties, and with a little experience it is easy to obtain concordant results in duplicate analyses. Usually, no trouble is experienced in distinguishing several different lipoids in any given serum, and the relative proportions of these perhaps vary in some diseases. In nephritis a cholesterin ester predominates. There is, therefore, some ground for the belief that both the quantitative and qualitative relations of a group of bodies so obviously important, should possess clinical significance.

The main objects sought in the present paper are to outline what is believed to be a new method for the quantitative determination of these obscure substances, and to submit the data obtained in the study of three different groups of cases comprising in all thirty individuals.

By various modes of extraction lipoids can be ob-

Table I. Normal Serum.

Values obtained by direct extraction of the insoluble Globulin thrown out of solution by CO_2.

[Dilution 1-100]

No.	Urine	Alb. P.m.	Sug. %	Serum	Bled After Fasting hours.	Acetone Extract %	Abs. Alc. Extract %	Total Lipoids %	Cholesterin present	Clinical Notes
1	Normal	–	–	Amber-color clear	6	0.95	0.20	.75	yes	Man 22 years old. 6 ft. [illegible] weighed [illegible] lbs. Vigorous constitution. Health perfect
2	"	–	–	"	5	0.50	0.45	0.95	yes	Man 39 years old. Police surgeon, 6 ft. 3 in. weighed 250 lbs. Athletic habits. Healthy
3	"	–	–	"	4½	0.60	0.25	0.85	yes	Boy 14 years old. Good health, but not vigorous
4	"	–	–	"	3	0.70	0.35	1.05	yes	Man 40 years old. 6 ft. tall, weighed [illegible] lbs. Energetic and healthy
5	"	–	–	"	5	0.65	0.40	1.05	yes	Man 40 years old. 6 ft. [illegible] lbs. Good [illegible] Very athletic. In perfect health
6	"	–	–	"	4	0.60	0.35	0.95	yes	Man 35 years old. 6 ft. [illegible] lbs. Vigorous health
	Average					0.66	0.33	1.00		

tained from serum. A very satisfactory plan, for example, and one which has been employed in a large number of experiments, in the course of this work, is to incorporate the fresh serum with calcined kieselguhr before proceeding to extract it in Soxhlet's apparatus. The resulting mixture is a dry powder in which the watery part of the serum is firmly held whilst there is no hindrance to the free passage of an ethereal solvent. In the order of their efficiency, from that which dissolves the least amount to that which dissolves the greatest, it has been found that the solvents rank in the following order, namely, chloroform, ether, acetone and absolute alcohol. One may also obtain lipoids in considerable quantity by adding serum directly to an excess of acetone or other solvent. By none of these procedures, however, is the yield as large as that obtained by the method about to be described, which depends upon the fact that the insoluble globulin precipitated by carbon dioxide invariably contains lipoids. One can readily extract these fatty bodies from the globulin by means of proper solvents, and it is probable that the figure obtained in this way nearly represents the total lipoids of the serum.

Method.

One cubic centimeter of serum is brought into a beaker of at least 200 cc. capacity, and diluted with 100 cc. of distilled water. Carbon dioxide, purified in the usual way, is then led into the solution, and allowed to pass through it until saturated. After this treatment, the solution is covered and set aside for twelve hours. In most cases the globulin cloud appears quickly, and reaches the maximum density after the gas has acted but a few moments. In striking contrast to this behavior, however, one occasionally observes, especially in milky sera, that the globulin separates out and then partly dissolves in an excess of the reagent. In this event, after some time re-precipitation takes place, but it is interesting to note that it always begins at the free surface of the solution. Obviously, such a system is exceedingly sensitive. And it is evident that the physical status of the lipo-globulin is intimately dependent upon optimal concentration. This phenomenon does not alter the end result of the experiment.

Filtration. Schleicher and Schull's black label filter paper, 9 cm. in diameter, number 589, is very satisfactory. Of this paper two thicknesses are necessary. As a rule, a large part of the precipitate passes through the doubled paper at the first attempt to filter the solution, and one must repeat the process from five to eight times before a perfect filtrate is obtained. The filtrate should be absolutely bright and limpid. In every instance, failure to obtain this result means faulty technic. At times the lipo-globulin precipitate appears to be quite unstable and to oxidize when too long exposed to the air. When this occurs it is very difficult to retain the precipitate, and filtration may become impossible. To avoid this source of trouble, therefore, the operation must be carried out without interruption.

Extraction. When the filtration is completed, and without attempting to wash out the small quantity of solution retained by the paper, the moist filter is carefully removed from the funnel, and with sharp scissors is snipped into a large beaker. Seventy-five cc. of chemically pure acetone are added, and the contents of the beaker are heated on the water-bath until the acetone boils gently. The hot solution is then decanted into a distillation flask through a filter. Successive portions of acetone must be used until the globulin is exhausted. For this purpose from 150 to 175 cc. are required. The acetone is now distilled off until about 10 cc. remain in the flask. This small remaining portion is decanted into a tared vessel, the flask is rinsed sev-

Table II. Parenchymatous Nephritis.

Values obtained by direct extraction of the insoluble Globulin thrown out of solution by CO_2.

[Dilution 1-100]

No.	Urine	Alb. Pm	Sug. %	Serum	Bled After Eating hours	Acetone Extract %	Abs. Alc. Extract %	Total Lipoids %	Cholesterin. Present	Clinical Notes
1	Sp gr 1024 Granular casts	Hvy Tr.	–	Greenish-yellow very turbid	5	1.70	0.40	2.10	yes	Man, 35 years old. Muddy complexion. No dropsy. Gastro-intestinal diets
2	Very large number coarsely granular casts	2.5	–	Milk-white opaque	6	1.95	0.70	2.65	yes	Man 34 years old. Massive oedema 6 months ago. Feet swell towards night.
3	Many coarsely granular casts	Hvy Tr.	–	Slightly turbid very abundant	5	1.25	0.20	1.45	yes	Man, 46 years old. Moderate dropsy. Gastro-intestinal disturbances
4	Many coarsely granular casts	V hvy Tr.	–	Milk-white opaque	5	2.20	0.40	2.60	yes	Man, 42 years old. Massive oedema until recently. Heart relatively negative.
5	Coarsely granular casts	2.0	–	Slightly turbid	5	1.30	0.15	1.45	yes	Woman 35 years old. Large. Feet swell towards night
6	Coarsely granular casts	Hvy Tr.	–	Slightly turbid	2	1.20	0.15	1.35	yes	Man, 50 years old. Short & stout. Mitral regurg., Slight dropsy.
7	Coarsely granular casts	Hvy Tr.	–	Slightly turbid	3	1.10	0.20	1.30	yes	Woman 65 years old. Moderate dropsy. Right hemiplegia 5 years ago.
8	Granular casts. Many with other and epithelium cells	V hvy Tr.	–	Cherry-red Free haemoglob.	2	1.55	0.20	1.75	yes	Man, colored, 30 years old. No dropsy. Heart relatively negative
9	Many granular casts	Hvy Tr.	–	Turbid.	2½	1.20	0.30	1.50	yes	Man, 74 years old. General anasarca. Legs enormously swollen. Very anaemic. Leteroid.
10	Sp gr 1.030 Granular casts	Tr.	4.5	Very turbid	3	1.85	0.30	2.15	yes	Man 50 years old. Moderate carbohydrate limitation (See also Table III)
11	Sp gr 1.038 Granular casts	Hvy Tr.	8.30	Amber-colored clear	3	1.60	0.45	2.05	yes	Girl 17 years old. (See Table III)
12	Very many granular casts	V. hvy Tr.	–	Very turbid	3	1.40	0.35	1.75	yes	Woman 42 years old. Nephritis of long standing. Tissues pale & flabby. Dropsy.
13	Many coarsely granular casts	V hvy Tr.	–	Slightly turbid	3	1.10	0.30	1.40	yes	Woman 48 years old. No dropsy
14	No casts seen Sp gr 1.022	Tr.	–	Very turbid	5	0.90	0.65	1.55	yes	Man 35 years old. Severe furunculosis. Autogenous vaccines not effective
15	Large number granular casts	V hvy Tr.	–	Very turbid	3	1.30	0.50	1.80	yes	Man 38 years old. Acute nephritis following 2 injections of Salvarsan
16	Moderate quantity			Very turbid	4	0.80	0.60	1.40	yes	Woman 26 years old. Syphilis. 5 injections of Salvarsan. (Compare with No 15)
17	Large number hyaline and granular	0.30	–	Turbid	2	1.05	0.30	1.35	yes	Woman 37 years old. Mitral regurgitation. Dropsy 8 months; improved by rest
18	Many coarsely granular casts	0.10	–	Turbid	6	1.40	0.45	1.85	yes	Woman 35 years old. Nephritis acuminata. Legs pit deeply on pressure
	Average					1.38	0.36	1.74		

eral times with a few cubic centimeters of acetone, and, finally, the tared vessel, preferably, a small Erlenmeyer flask, is heated on the water-bath until the volatile contents are driven off and its weight becomes constant. For practical purposes, the small error introduced by the presence of traces of serum proteins in the unwashed filter, is negligible.

Absolute Alcohol. The filter fragments and globulin remaining from the acetone extraction still contain lipoids which though insoluble in acetone are readily taken up by absolute alcohol. As in the case of acetone, it is best to conduct the extraction at the boiling point. About 75 cc. of absolute alcohol are required. The alcoholic extract is distilled and the residue is dried to constant weight at 100° Centigrade.

The acetone extract is an amber-colored oil. At first it is perfectly clear, but after several weeks it becomes slightly opaque. It has a faint and not unpleasant odor suggestive of an ester. Besides traces of a clear oil, absolute alcohol extracts a whitish opaque substance which adheres firmly to the walls of the containing vessel.

The 1-100 solution of normal serum is practi-

Table III. Diabetes Mellitus.

Values obtained by direct extraction of the insoluble Globulin thrown out of solution by CO_2.

[Dilution 1-100]

No.	Urine	Alb. p.m.	Sug. %	Serum	Bled After Eating hours	Acetone Extract %	Abs Alc Extract %	Total Lipoids	Cholesterin Present	Clinical Notes
1	Sediment negative	Tr	Tr	Amber-color clear	3	0.70	0.45	1.15	yes	Man 46 years old Looks and feels well Moderate Starch Limitation Mild case.
2	1.030. Sp Gr. Granular casts	Tr	4.5	Turbid Greenish yellow.	3	1.85	0.30	2.15	yes	Man 50 years old Severe case very little starch.
3	Sediment negative	–	2.5	Amber color clear	3	1.05	0.10	1.15	yes	Man 39 years old Vigorous young Laborer Fractured leg feels well Mild case
4	Sediment negative	Tr	0.21	Amber-color clear	3½	0.60	0.20	0.80	yes	Woman 65 years old Weighed 205 lbs Looks & feels well. Mild case
5	Sediment negative	Tr	1.85	Amber-color clear	3½	0.80	0.15	0.95	yes	Woman 52 years old Weighed 180 lbs Looks and feels well Mild case
6	Coarsely granular casts	hvy. Tr.	8.30	Amber color clear	3	1.60	0.45	2.05	yes	Girl 17 years old Furunculosis Diabetes of most severe form
7	Many granular casts	hvy Tr.	++ not det	Slightly turbid	4	1.10	0.30	1.40	yes	Woman 46 years old General health good Slight nephritis. no dropsy
8	Sediment negative	–	4.	Slightly turbid	3½	0.90	0.15	1.05	yes	Man 60 years old Severest form Coma Bled 2 hours before death (in coma)
	Average					1.07	0.26	1.33		

cally clear. Carbon dioxide precipitates from it a very fine, diffuse cloud of globulin which shows little tendency to subside. Commonly, at the end of 12 hours it is still partly suspended, though one can then see a clear zone near the free surface of the solution. The yield of lipoid from this attenuated cloud of globulin and the trace of deposit on the floor of the beaker, is surprisingly large.

The individuals selected for the normal series were perfectly healthy. With two exceptions the lipoid value obtained was nearly one per cent.; that is, one decigramme of lipoids to one cubic centimeter of the original serum. This probably is about the normal average.

In well marked cases of nephritis it seems to be characteristic that the serum separates very quickly, and that, upon the whole, it is more abundant in quantity than in normal blood.

The lipemia varies considerably in degree. In an average case the serum is diffusely turbid. A pale, opalescent fluid, best observed by transmitted light. But in a series of cases one encounters every grade of cloudiness, from that barely perceptible, to a downright milky opacity. As a rule, it has been found that turbid serum may be taken to indicate albuminuria, though the amount of albumen in the urine is not proportional to the lipemia. For example, in the two individuals, numbers 2 and 4, Table 2, whose sera were equally white and opaque, the albuminuria was widely different; in one, the albumen reached 13 per mille at times, and was always present in large quantity; in the other, in marked contra-distinction, it never exceeded a very heavy trace. Strict parellelism between lipemia and albuminuria, therefore, does not exist.

In every serum examined in the course of this work, over fifty in all, cholesterin could be detected. It was not estimated quantitatively. But, if one judges by qualitative evidence alone—that is, other things being equal, the relative intensity of the color reaction—there can be no doubt that a cholesterin ester is present in increased amount in nephritic serum. Chauffard, Laroche and Grigaut (le taux de la cholestérinémie au cours des cardiopathies chroniques et des néphrites. *C. r. Soc. Biol.*, 70, 108, 1911) have already called attention to this. In six uremic patients examined by them the cholesterin value was very high. They assert, also, that in nine individuals with uncompensated heart conditions and edema, the cholesterin content of the blood was normal. In a tenth patient, on the contrary, with kidney phenomena, marked cholesterinemia was found.

In support of the former observation, a single case may be cited. A man, forty-eight years of age, was seen in the stage of broken compensation. There were present the usual evidences of mitral incompetency, together with albuminuria, casts and other signs of a concomitant nephritis. Massive edema was a threatening symptom. The blood-serum was found to be normal in appearance, and the lipoid value was only slightly over one per cent. From this finding it was inferred that the kidney disorder was probably functional in character. And this view was justified by the later clinical developments.

Further investigations no doubt will make it clear whether this differentiation is of practical value. It seems not unlikely, however, that the total lipoid figure, since it includes that of the cholesterin bodies, may render good service in the discrimination of a cardiac from a renal edema type. In severe edema-

tous states, then, a clear serum and normal lipoid number would point to the mechanical factor as the more important. Conversely, a definite lipemia under such conditions would point to organic disease of the kidneys.

In view of the well-known fact that lipemia has been frequently observed in diabetes, it was natural to expect an increased amount of lipoids in those patients, especially, who, at the same time, had symptoms of nephritis. Observations upon a very limited material tend to confirm this assumption. Out of eight diabetic patients examined, the only high values noted were in those individuals who had at the same time characteristic symptoms of nephritis. In no one of these eight patients, however, was a true lipemia present in the sense in which that condition is ordinarily understood. And in five patients the lipoid numbers were practically normal. This finding, that the lipoids are not increased in diabetes in a majority of cases, is entirely in accord with the results of continental workers. Klemperer and Umber (*Zeit. f. klin. Med.*, 65, 340, 1908), for example, who examined ten diabetics with reference to the fats present in the blood-serum, state that nine had acidosis but no lipemia. According to them, "Koma mit Azidosis kann tötlich verlauten ohne dass Lipämie dazu kommt, dagegen ist Lipämie stets mit Azidosis vergesellschaftet." Adler (*Berl. klin. Woch.*, Aug., 1909), and also Klemperer (*Zeit. f. klin. Med.*, 61, 145, 1907), have discussed the relative importance of cholesterin and lecithin esters. The latter author found them present in excess, and concluded for that reason that the lipemia could not be explained by simple fat transport as the subcutaneous and mesenteric fats do not contain much cholesterin.

Conclusions.

1. In chronic nephritis, the group of globulins thrown down by carbon dioxide is markedly increased.
2. This globulin always contains lipoids and yields them to organic solvents.
3. In normal serum the lipoid value ranges from 0.85 to 1.15%.
4. In chronic parenchymatous nephritis the total lipoids are increased and the serum may contain 2.60%.

ANNUAL MEETING

—of the—

STATE SOCIETY

April 16th, 17th and 18th, 1912

HOTEL DEL MONTE

ARE YOU GOING?

SAN FRANCISCO COUNTY—

Committee on Necrology Report.

With the passing of the year death has claimed six of our members. Instead of having a line or two appear in the State Journal at the time of their decease, we have preferred to present for this report photographs of our departed members with biographical data attached thereto, all of which we intend to publish in the February issue of the State Journal.

Dr. Tullio A. Rottanzi died on the twentieth of January, 1911. He had been suffering from broncho-pneumonia when suddenly a thrombus of the right coronary artery terminated his life.

His death was premature, for, having been born on the 27th of April, 1857, he failed to attain the age of forty-four years. But short though his life was, it was full and varied. He was born in San Francisco, the son of a physician who had immigrated from Switzerland. After graduating from the Lowell High School he began the study of medicine at the Cooper Medical College, where he completed the prescribed course in 1887, before he was twenty-one years old. This precocity enabled him to extend his studies and to acquaint

himself with the world before he entered upon practice in 1890. For two years he sojourned in Mexico. In the pursuit of additional knowledge later in his career he spent a year at the clinics of France and Italy. Without intermission of his professional labors he served the public in San Francisco with great distinction as Supervisor during 1897 and 1898. Again in 1904 he devoted himself to the welfare of the municipality as City Physician and continued in that office for nearly four years. To the need of the Nation he responded during the war with Spain by enlisting in the

Seventh California Infantry. To his wife, who survives him, he had been married less than three years.

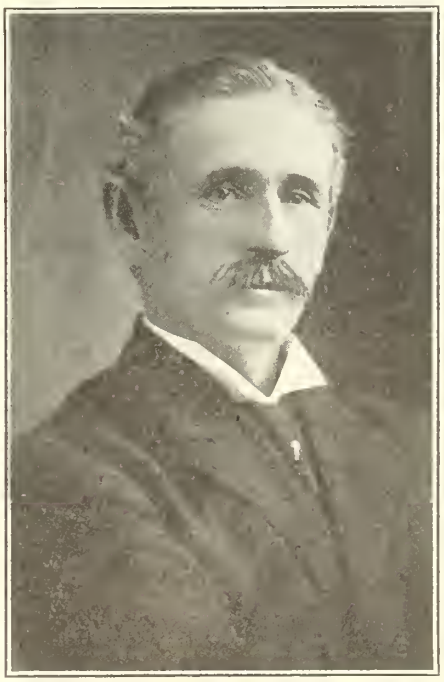
Among the general public his name was very familiar, and his popularity was widely diffused by the beneficent legislation of which he was the author.

Dr. Lloyd Alexander Craig died on the seventh day of February, 1911. He was born in Oakland, Cal., September 7th, 1884. In 1903 he finished his studies at the Lowell High School. From the Medical Department of the University of California he received his degree in 1907. As an interne at St. Luke's Hospital he continued his labors, and

was prosecuting them still further as resident physician at St. Mary's Hospital when death overtook him. It is deeply to be lamented that after zealous preparation no time was granted him for fruition.

Dr. William J. Walsh, at the time of his death Coroner of San Francisco, died June 20th, 1911, from traumatic pneumonia induced by injuries received when he was hurled over a cliff at Muir Woods. The end came at Mt. Zion Hospital, where Dr. Walsh had served as interne immediately after graduating from medical college. Dr. Walsh was thirty years old. He was a graduate of Sacred Heart College of this city and of St. Mary's College, Oakland. His college career was successful in the extreme. He was a leading member of the League of the Cross Cadets when that organization was formed in this city; he won the diamond medal presented to the Cadets by Archbishop Riordan for public speaking. He was a member of the Knights of Columbus, the Eagles and many other fraternal and social organizations, of this city. As a student he was exceedingly popular amongst his fellows, not only standing high in his studies but at all times manifesting great interest in student athletics. Following his graduation from St. Mary's College, Dr. Walsh pursued his medical studies at the University of California,

from which he graduated in 1902. Manifesting an interest in politics shortly after attaining his majority, he entered the race for Coroner six years ago and was elected to office before he had reached his twenty-sixth birthday. He distinguished himself for prompt and effective work during the days following the 1906 fire.



Dr. Edward G. Frisbie died on the thirteenth of July, 1911, from erysipelas which followed upon

an abrasion on the eyebrow. This industrious practitioner had rendered much service to the community, but he was taken away at a time when he had still much more to give, for he attained the age of only fifty-three years. He was born near Vallejo, March 17th, 1858. His youth was passed under the wholesome conditions of life on his father's farm, while he attended school at Vallejo and at Napa. He had the benefit of academic training at Berkeley before he entered upon his studies at Cooper Medical College. He graduated in 1882, but continued his connection with the college for several years more as assistant in the clinics. Though diligent in practice he had a surplus of energy to expend on other pursuits. He engaged prominently in the foundation of the Order of the Native Sons and was one of its early presidents. In 1888 Dr. Frisbie married; his wife and three daughters survive him.

Dr. John Wagner died November 22nd, 1911. For years he had suffered from a disease of the heart, and this at last was the cause of his death.

Dr. Wagner was born in Steubenville, Ohio, in 1847. As a mere boy, in his fifteenth year, he went off to the war with the Ohio infantry. His subsequent career seems to have been peaceful enough; for, coming to California in 1869, he devoted himself to the study of medicine and immediately after his graduation from the Medical College of the Pacific in 1872, he established himself in practice in the Mission, where he remained during the rest of his life. His martial memories he cherished as a member of the Grand Army of the Republic and received from his comrades such honors as they had to bestow.

INTERSCAPULAR-THORACIC AMPUTATION.*

By H. A. L. RYFKOGEL, M. D., San Francisco.

The experimental work of the last eight or nine years has emphasized clearly that cancer in its beginning is purely a local disease and surgeons are beginning to realize that operations for cancer to be successful must not be limited because the disease is of small extent, but that on the contrary, the rule should be laid down that the earlier the stage of the disease the more radical should be the operation. In other words, in early cancer wide block dissections which remove the original growth, the primary lymph glands, the connecting lymphatic channels and all fascias which the growth is liable to permeate, offer the only hope for a cure. We have long recognized these statements as truisms in cancer of the breast, and practically all surgeons to-day perform some modification of the Meyer-Handley operations, which are based on the above principles. In cancer of the lip and uterus, some surgeons perform radical operations of this type, while others, on account of the technical difficulties involved or cosmetic considerations, perform less extensive and consequently less satisfactory operations. In cancer of the large bowel and penis, although radical operations in block are quite feasible, they are rarely performed. In other cases, such as cancer of the tongue, a satisfactory technic has not been evolved. In cancer of the hand and forearm, the interscapular-thoracic amputation should be the operation of choice whenever the growth is of a highly malignant type or when there is the slightest evidence of involvement of the axillary glands.

In sarcomas of the humerus there is always a great tendency to the formation of metastases in the muscles leading to the trunk, and therefore an operation which allows of their complete removal is essential. In cancer of the breast with beginning edema of the arm from invasion and compression of the axillary vein, this operation should always be considered, since the arm will usually become useless and a source of constant pain. Case No. 2, although not one of cancer of the breast, presented a similar condition and the remarkable improvement that resulted demonstrated the justification of the operation. Metastases are not always a contra-indication to the girdle operation, because the removal of ulcerating areas and infiltrated nerve trunks gives the patient surcease from pain and toxic absorption, and so he usually gains in weight and has many additional months of comfort. Patient No. 2, for instance, was practically dying at the time of his operation, was running a high temperature and was suffering excruciating pain. Afterward he gained 30 pounds and was able to return to work.

The operation usually done at present is that described by Berger in 1886. The operation, although extensive, is not difficult and the mortality is low. The technic as employed in my cases is as follows: An incision is made along the upper border of the clavicle, the middle third of which is removed with the Gigli saw. The sub-clavian artery is now ex-

* From the Surgical Laboratories of the San Francisco Polyclinic.

posed by displacing or splitting the sub-clavius muscle and cutting through the fascia. It is doubly ligated and divided, the arm is held up so that it will be partly emptied of blood, and the sub-clavian vein in then ligated and divided. The supra-scapular and transversalis colli arteries are now isolated and tied. The brachial plexus is exposed and infiltrated with 1 per cent. cocaine solution and cut across. An incision is now made from the acromion downward across the axilla to the angle of the scappula and up again back of the shoulder to the acromion. The incision will have to be greatly varied according to the location of the disease in the axilla and on the chest. The anterior flap is now dissected off the chest wall so as to allow of complete removal of the pectoralis major and minor, which are carefully dissected off together with the axillary contents. The latissimus dorsi is sectioned as far from its attachment as possible. The extremity now falls away from the chest wall and the serratus, rhomboidei, levator anguli scapuli and trapezius are cut through and the operation is complete. The wound should be completely closed and a large drainage tube inserted low down through a small incision. Recovery is usually very rapid, although the patients have at first some difficulty in balancing themselves.

Case No. 1. This man, a Belgian fireman, 27 years old had syphilis some six years prior to my seeing him, but a thorough course of mercury and iodide had no effect upon his present disease. Seven months ago the patient began to feel some pain in his arm and one day while in the bath sustained a spontaneous fracture of the humerus. During the succeeding months he was in different hospitals and his condition grew gradually worse until he came under my care Sept. 9, 1905. At this time he showed a tumor of the upper end of the humerus, which had apparently invaded the shoulder joint. The tumor had infiltrated the deltoid and projected into the axilla. No ulceration was present. The patient refused operation until a section had been removed and the growth shown to be a spindle-celled sarcoma. An interscapular-thoracic amputation was made on Sept. 16th. Owing to a nurse's error, the nerves were not infiltrated with cocaine, and the patient, although in excellent condition prior to the operation, was greatly shocked thereby. He made an excellent recovery, the wound healing by first intention. Three years later the patient showed no signs of local recurrence but suddenly developed gangrene of the right leg and a hip joint amputation was done by another surgeon. About this time he developed a cough and dyspnea and died 38 months after my operation. An autopsy was refused.

Case 2. The patient, a Finnish farmer, 50 years old, bruised the fourth finger of his right hand six months ago. Suppuration developed around the nail and persisted two years, when the odor and pain became so great that for the first time, he consulted a surgeon. At this time the hand and forearm were greatly swollen and Dr. John White of Sacramento amputated in the middle of the second third of the humerus. The stump healed quickly and the patient returned to work 4 years ago. Four months ago the patient noticed an enlarged gland in the axilla about the size of a lima bean. Within a week four or five more developed. The stump began to swell and became very painful, the enlarged glands soon broke down and when he came to my office on Nov. 25th, a fungating suppurating mass filled the axilla. The patient had a cough with profuse expectoration. No T. B. were present. He showed areas of dullness over the right lung. The patient had lost 15 lbs. in the last couple of months and was in a bad condition I did an interscapular-thoracic amputation on Dec 1, 1909, the brachial plexus was carefully infiltrated with 1% cocaine solution and an extensive area of skin was removed from the chest wall. It was not covered at the time of the operation but was successfully grafted at a later date. The patient suffered no shock and recovered rapidly. In two months he had gained 30 lbs. but was still coughing. Five months later he was still in good condition and there was no local recurrence. Since then I have lost sight of him.

The contrast between the two operations with and without infiltration of the plexus is striking The first patient, a young man in excellent condition was not infiltrated and suffered extreme shock, the second was an old man in very poor condition and had a more extensive operation, but had his nerves infiltrated. He suffered no shock.

SELECTED CHAPTERS IN THE STUDY OF SPEECH DISTURBANCES. NO. 2.—THE RESPONSIBILITY OF THE GENERAL PRACTITIONER TO THE CHILD WITH A SPEECH DEFECT, WITH SUGGESTIONS AS TO PROPHYLACTICS.*

By HENRY HORN, M. D., San Francisco.

(Continued from Page 27, January, 1912, Journal.)

of a mistake when he is reciting or fear of a correction by his overzealous and probably tired teacher. To use a homely expression, he is continually "worked up." I need but to mention these things and the prophylactic possibilities involved will be seen without going into details.

The infectious diseases, and especially diphtheria, scarlet fever and typhoid, are well-known causal elements. It is exceedingly common for parents to observe that the child's speech was decidedly worse after such an illness.

The role which the adenoid plays in the etiology of stuttering furnishes an interesting chapter and has been very carefully studied. Guye first applied the word Aprosexia to that mental and physical complex which follows on a child being unable to use its nose for breathing purposes. This condition is now so well known that it causes no comment when the removal of adenoids not only vastly improves a child mentally but actually cures an idiot. That stutterers have been healed by this simple operation lies within the experience of most specialists in speech disturbances. Statistics show that 50% of the stutterers have adenoids. As a corollary to this we recognize that the effect of all nasal disturbances, polyps, septum deviations, etc., are of great importance in the etiology of these conditions.

A great war has been waged in Europe over the role which the scrophulous diathesis and rickets play in the etiology of the stutterer. The various arguments do not interest us here. That the two are found very commonly together is a well-known fact. In these two diseases the bodily resistance is low and it is probable that this is the principal causal relation. That the diminished breathing space in rickets is a direct causal factor is very doubtful. My former chief, Professor Gutzmann, has carefully gone into

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* Read by invitation of the Alameda County Medical Society, November 15, 1910.

the matter and finds that diminished lung volume has no direct bearing on the subject.

It would not do to leave this interesting chapter on etiology without completing it with a few words on the psychical causes of stuttering. We must distinguish between two types: psychical shock and psychical contagion.

The effect of psychical shock has been very much overestimated. That it does have a direct causal bearing there can be no question, but that it is usually evanescent in its effects is now generally recognized. Psychical infection, on the other hand, is a very common cause of stuttering. For that reason some of the best of German observers contend that a stuttering child should be removed from school on account of the danger he is to other children. Often we have real epidemics of stuttering, where the removal of the original offender would put an end to the trouble.

I have not yet had occasion to speak of sex as a determining factor. It is very hard to get at reliable statistics, as in our clinic stuttering among girls was not considered by the parents as important as among boys, and therefore they were not brought as often for examination to the clinic. One must therefore depend upon school statistics. In nearly 700 cases from six different German cities, 71% were boys and 29% were girls. As we reach the adult life the percentage of males increases, as Coen gives 90% for men and 10% for women. This very interesting change in the percentage Gutzmann has sought to explain as a result of his very celebrated studies on the breathing of the stutterers. Both boys and girls have a costal abdominal type of breathing. After puberty the costal type remains in the case of the female and her stuttering usually disappears at this age. A spontaneous healing on the part of the boy is exceptional. The conclusion is obvious.

Colombat tries to explain these striking results differently. He contends that woman has a greater freedom in speaking and through a desire to please and to make herself perfect she is ever on the outlook to try and correct any imperfections as soon as they are recognized.

The economic usefulness of the adult stutterer is limited. He can be a bookkeeper, a mail carrier, a farmer, a ditch digger, a fruit picker, a horseshoer or do any other kind of purely manual labor, but from the learned professions he is excluded; he can not be a teacher, and even as a salesman behind the counter he is of no use. He is a sociological fizzle, a burden to the community, but most of all to himself. Knowing himself to be different from other men, he becomes morbid, physically depressed and mentally reticent.

A man who speaks correctly can not stutter. This antithecal statement contains the basal principle of all prophylactics in speech defects and will be elaborated upon later. To put it in another way, I could say, *if we can teach the child to speak correctly,* I mean in the physiological sense, *he could never develop a speech defect.* If we could teach the child with a tendency to stutter to speak physiologically, to speak as a normal child should, he would be cured of his stuttering. This is the underlying principle of Gutzmann's method. You must grant me that it sounds sensible. It is sensible to this extent, that in 1000 cases of stuttering which he reported several years ago,—and his experience is the largest in the world,—that in 1000 cases 87% were permanently cured, 10% very much improved and 3% were not cured. Now this simply means that these results, equaled nowhere in the world, were obtained as a result of a study of the way a child normally speaks, of the way a child normally develops its speech, and then the application of these principles to the patient with a speech defect, be it a child or an adult. It sounds logical and it is. And here is where the general practitioner comes in, and where his prophylactic measures commence. Let him learn the elements of the physiology of speech and the secret is out. Even a brief review of this subject would here occupy too much time, and I will therefore pass on to a consideration of the subject of prophylactics.

I will group the suggestions under six headings in order that they can be easily carried in the mind, so that when you have an opportunity to advise a mother or a father, a nurse, or a teacher, you will be able to do so in a succinct and striking way. Let it be part of your missionary work as is now the education of the public in matters of tuberculosis and venereal prophylaxis.

1—*Let the model from which the child copies be as perfect as possible.*

Just in proportion as the mother speaks slowly, clearly and distinctly, just in that proportion will the child imitate her. Is there a tendency on the part of either of the parents to speak rapidly, let there be an especial effort on their part to always speak slowly before the child.

One who has not had experience in the teaching of these children can not realize the strain that is put on the patience of the teacher, the relations and the parents during the period of this monotonous training. One is always under a certain suppression, one must hold his thoughts always in the leash and be always on the watch that no backsliding occurs.

2—*The child must be carefully protected from contact with persons employing imperfect speech.*

The faculty of imitation in children is so strong that one can not exercise too mch care in this respect. The parents must articulate sharply and distinctly and especial attention must be taken in the selection of a suitable nurse. Employ no foreigners. Uneducated Swedes and Germans are especially to be avoided. The harsh consonants and the grammatical mistakes of these races as generally found among nurse girls are especially dangerous.

In children who show a tendency to be backward in imitating sounds, we must make it a special point to speak as much as possible before them.

3—*Observe* the physiologic sequence of consonants in teaching a child to speak.

In the development of the various sounds of speech a certain order is always followed by chil-

dren of all the nationalities which have been studied. This order depends on certain physiological laws, and briefly speaking, follows the ease with which the consonants are formed. Therefore one must, in educating a child to speak, and especially one who shows a tendency to a speech defect, use this same order. To Fritz Schultze we are indebted for such a careful study of this subject that his work has now become a classic. He was able to demonstrate that the physiological difficulty of articulation increases as we go from those consonants formed with the lips and tip of the tongue to those formed with the back of the tongue and roof of the mouth. Thus we divide all consonants into three articulation systems. Briefly they are as follows: First articulation system: Includes all consonants formed with the lips alone, or with the under lip and the upper row of teeth, viz: b, m, p, f, v. Second articulation system: Includes all consonants formed with the tip of the tongue, the teeth and the ant. part of the hard palate, viz: d, s, l, r, n, t, s, z. Third articulation system: Includes all sounds formed between the back of the tongue and the palate, viz: g, j, ng, r, k, ch.

If now it becomes necessary for the physician to recommend to the parents a course in imitation as described under the fourth suggestion as to prophylaxis, this order should if possible be observed, without of course so pedantically holding to it that the child's interest is lost.

5—*The gradual development of speech should be watched with unremitting care.* Remember that any child, but especially one with a tendency to hasty speaking, reflects in his speech his daily life. Full of animal spirits, he plays all day long; his wishes and his ideas are always in advance of his bodily ability to carry them out. Ideas tumble over one another for physical expression, he drops one plaything to take up another before the first idea is brought to fruition. So with his words, the busy thoughts crowd his little brain, he strives in vain to express himself as quickly as he thinks, and the peripheral muscles of expression find themselves utterly unable to cope with the task. What occurs? An incoordination of the breathing and speaking mechanism results and the child develops into a stutterer.

What would suggest itself as a practical remedy to correct this hastiness in speaking and thinking? The elder Gutzmann's plan has proved of such practical benefit, that I use it as a routine part of all treatment of stutterers, and it is equally valuable as a prophylactic agent. The idea in brief is this:

Every child is fond of stories and fairy tales. Relate them to him in short, logically constructed sentences, and let him repeat the sentences slowly and clearly after you. Then ask short questions concerning each sentence or idea, and have the child answer in a slow, clear and logical manner. In this way the child learns to think logically and speak slowly and clearly. It teaches him to think and to have patience and listen to what other people are saying. Children also love to look at pictures. One can amuse them by the hour telling them stories about them and at the same time asking them questions. Here is an opportunity which the patient parent who has the welfare of his child at heart can utilize and do an immense amount of good, simply by following the simple suggestions of slow speaking, clear speaking, and logical questioning. The child must be required to answer slowly, distinctly and logically. Never let a slip go by. Insist on a clear articulation of every letter. Let the child always watch your lips. Never scold, always praise, and never let the child imagine for a moment that he is speaking differently from other children.

6—In the third period of speech development, or the period in which the child's thoughts are expressed in words, there are always certain sounds that the child cannot pronounce correctly, as for example, the substitution of a "T" for a "K"; this is in a certain sense physiologic and is technically known as physiological stammering, but this defect can be carried on into a later period and the child then becomes a stammerer (not a stutterer, a distinction which I will explain later). This developmental defect can be easily corrected by remembering the suggestions made above, namely, a most careful attention to clear articulation before the child.

Finally, remember that when the child first goes to school at the age of six, speech development is not half completed and certain prophylactic regulations are here to be carried out which are principally to be put in the hands of the teachers.

As the child begins with the public school work, usually at the age of six, there are two groups of speech disturbances to which he is especially liable, both different as to their etiology and both radically different as to their prognosis. These two groups are Stuttering and Stammering. These two words stuttering and stammering have so often been confounded or used synonymously, that before I go any further I wish to explain the difference. By stuttering I mean, what one usually understands by that term. Stuttering is a condition in which, through a lack of coordination of the nervous mechanism controlling the organs of speech, there is difficulty in enunciation which may comprise either spasmodic effort without articulate sound or frequent repetition of the same articulate sound before the utterance of the one following.

The word "Stammer," on the other hand, covers all those defects of speech where there is a faulty pronunciation of any given letter or the substitution of one letter for another.

The only statistics which are at hand are those compiled by Gutzmann, and I will use them to emphasize what I am about to say. He was able to draw a conclusion from his statistical studies which is pregnant with thought and is extremely interesting. Studying the occurrence of stuttering according to ages, he found that among 3000 stuttering school children the following results were obtained: That among every hundred children of this series, 6% were between 6 and 7 years, 10% between 7 and 8, and that in 11th and 13th years 15% of the number occurred.

The increase at the time of puberty is easily understood on account of the change taking place in

the nervous system at that time, but the rapid rise of the curve at the end of the first school year is very striking. What does this indicate? It indicates that the latent causes of stuttering which up to now were in a favorable environment, are suddenly thrown into a most unfavorable one; the excitement of the school, the anxiety and nervous strain of the lessons, the fright of speaking before strangers, and the association with other stuttering children, all have a strong influence. This, however, does not entirely explain the situation, for otherwise these same factors would be at work on all the children and we would expect far more stutterers. An explanation is found in a study of the family of these children where hereditary plays an enormously important part. Against such conditions the school is helpless, but much indeed can be done by the teacher who knows something of these matters and who can mitigate the severity of the regime, and can prevent as far as possible all causes which would tend to irritate the nervous system of the child.

The influence of the school on the stammerers is entirely different. The first year of school has almost the opposite influence. At the end of it, over 29% are cured by ordinary instructions in the school, and as the 14th year approaches but 6% remain. If now, I again repeat, the teacher knew something about the elements of this subject, and I think you will grant me, enough has been said to warrant my claim that they should be instructed in the principles of the subject, this percentage could be almost entirely wiped out.

"The time to cure Stuttering is before it begins." These few suggestions should be combined with a regulation of the general health of the child. Just in proportion as his general health is below par, just in that proportion will he stutter. It is a very common experience to have a child almost cured and ready to be discharged and then to have a relapse occur solely and simply on account of an acute coryza. This brings with it a corollary which is also important in many other respects. One of the principal things which must be attended to when the child begins a course of instruction for the cure of stuttering, is a removal of the tonsils and adenoids. The direct influence of these can not be overestimated and their indirect influence is well known to every general practitioner.

Finally of especial importance is the one unbreakable rule that the child himself must never hear the word Stutter. Just the moment that he recognizes that he is different from other children, just at that moment a psychological element comes into play which has a permanent influence on his future and makes the subsequent treatment the more difficult. Remember we are not trying to cure Stuttering, we are simply substituting a normal method of speaking and breathing for an abnormal one.

And finally we must not forget that we can teach the child to speak normally, but if the child himself will not use the means for correct speaking, which we have put into his hands, he will still speak incorrectly.

(Concluded.)

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of December, 1911, the following meetings were held:

Combined meeting of Medical and Urological Sections, Dec. 5th.

1—Analysis of Sixty-Two Cases of Lues Treated with Salvarsan. Louis Gross and W. S. Johnson. Discussed by R. L. Rigdon. (This paper was published in the January issue of the Journal.)

2—Fatal Case of Luetic Myelitis after Intramuscular Salvarsan Injection. V. G. Vecki. Discussed by Leo Newmark.

3—Salvarsan in Nervous Diseases. H. C. Moffitt.

4—Salvarsan in Cutaneous Medicine. Howard Morrow.

5—The Intravenous Application of Salvarsan, with Special Reference to its Technic. Geo. W. Hartman.

General discussion by the following members: Wm. Ophuls, C. M. Cooper, L. S. Schmitt, John C. Spencer, Louis Breitstein, H. R. Oliver, S. J. Hunkin, Wm. Ford Blake, W. C. Alvarez, F. C. Keck, H. C. McClenahan, Geo. D. Culver, Louis Gross, V. G. Vecki.

Annual Meeting, December 12th, 1911.

1—Clinical Laboratory and the Clinician. Rachel L. Ash. Discussed by Wm. Ophuls.

2—Annual Address of President.

3—Reports of Secretary, Librarian and Committees.

4—Election of Board of Directors.

Section on Surgery, December 19th, 1911.

1—Demonstrations. H. B. A. Kugeler. (a) Spontaneous Rupture of a Large Vein on the Surface of a Fibroid Uterus.

J. T. Watkins (b) Astragalectomy (Whitman's Operation). (c) Operation for the Cure of Claw-Foot. (c) Operation for Bunion.

2—Recent Advances in Regional (Local) Anesthesia. Leo Eloesser. Discussed by Dudley Tait, H. B. A. Kugeler, Sol Hyman, J. T. Watkins.

Spontaneous Rupture of a Large Vein on the Surface of a Fibroid Uterus.

Specimen presented at the Section on Surgery of the San Francisco County Medical Society, December 19th, 1911, by H. B. A. Kugeler, M. D.

Miss W., 27 years, German, nurse girl. Never sick in her life; menstruation always regular; occasional pain in the abdomen. She had paid no attention to the very gradual enlargement of the abdomen but always had difficulty in getting a properly fitting corset. On November 16th, 1911, while preparing lunch for her charge, she suddenly collapsed and was found by her mistress lying in a chair blanched and gasping for breath. Dr. W. B. Lewitt was summoned who diagnosed an internal hemorrhage and from the shape and feel of the mass in the abdomen, suspected an extra-uterine pregnancy at term and referred the case to Dr. C. von Hoffman. The latter had her transferred to the Children's Hospital and ordered normal salt transfusion. The patient's relatives who had been notified, desired to have me see the case and Dr. von Hoffman kindly transferred her to me. Under ether anesthesia Dr. von Hoffman made a vaginal examination and pronounced the case not pregnant. So the condition must be one of enormous fibroids. On opening the abdomen enormous quantities of blood escaped, the mass was rapidly delivered, although with considerable difficulty. On its posterior surface was a vein as large as a small finger which had ruptured and from which blood was pouring. Beside the two enormous fibroids the body of the uterus was studded with smaller ones and a supra-cervical hysterectomy, including a removal of both tubes and ovaries, was performed. The patient rallied promptly and left the hospital on the 17th day. The specimen shows how easily it could be mistaken for a foetus.

SOCIETY REPORTS

BUTTE COUNTY.

The regular monthly meeting of Butte County Medical Society was held December 12th at the offices of Dr. Ella F. Gatchell, the President, Dr. D. H. Moulton, in the chair. Members present: Drs. C. L. Browning, Edw. Baumeister, N. T. Enloe, H. M. Parker, P. L. Hamilton, D. H. Moulton, O. Stansbury, M. P. Stansbury of Hamilton City and L. L. Thompson of Gridley and Ella F. Gatchell. Dr. H. M. Parker read a paper on Otitis Abscess of Brain.

Officers elected to serve for 1912: President, Dr. C. L. Browning; Vice-President, Dr. Edward Baumeister; Secretary-Treasurer, Dr. Ella F. Gatchell; Censor, Dr. M. P. Stansbury. Dr. N. T. Enloe resigned from the Board of Censors and Dr. L. L. Thompson was elected in his place.

Owing to the prevalence of contagious diseases in Chico and vicinity with imperfect quarantine, it was voted to request the Board of Supervisors to appoint a Deputy Health Officer for the vicinity of Chico.

The regular monthly meeting of Butte County Medical Society was held Tuesday evening, January 9, at the offices of Dr. D. H. Moulton.

President C. L. Browning in the chair.

Members present: C. L. Browning, Edw. Baumeister, D. H. Moulton, Hal M. Parlin and Ella F. Gatchell.

Dr. L. L. Thompson of the Board of Census having received an appointment as surgeon on the battleship Pennsylvania, his place on the Board of Census was declared vacant, and Dr. Edw. Baumeister was elected to fill the place.

Committees Appointed.

Committee on Health and Legislation—Dr. O. Hawkins Biggs, Dr. T. B. Reardon of Oroville, Dr. N. T. Enler of Chico.

Committee on Funds for State Board of Health —Ella F. Gatchell and Edw. Baumeister.

A paper was read by Dr. D. H. Moulton on Salvarsan and methods of using same and demonstrated. Discussed by all present. Adjourned.

ELLA F. GATCHELL, Sec'y.

MERCED COUNTY.

At the last regular meeting of Merced County Medical Society the following officers were elected for the ensuing year. Drs. H. DeLoss, President; Brett Davis, Vice-President; H. Kylberg, Secretary; W. E. Lilley, Treasurer; E. O'Brien, Delegate and B. Davis, Alternate. Merced County is booming, and our County Medical Society expects to revive.

H. KYLBERG, Secretary.

MONTEREY COUNTY.

The annual meeting of the Monterey County Medical Society was held December 22nd, at the Hotel Abbott, Salinas. The following new officers were elected for the year 1912: Wm. A. Little, Monterey, President; Garth Parker, Salinas, Vice-President; E. K. Abbott, Monterey, Secretary; John Parker, Salinas, Treasurer; T. C. Edwards, Salinas, Censor; H. T. Crabtree, Salinas, Delegate to State Society, and W. A. Little, Monterey, Alternate to State Society. H. T. CRABTREE, Secretary.

SANTA CRUZ COUNTY.

The Santa Cruz County Medical Society had its regular meeting in Watsonville, January 8th.

Resolutions were adopted asking Governor Johnson to favor a generous appropriation to aid the State Board of Health in its beneficial work. Dr. E. E. Porter read a paper on Infant Feeding. Dr. Geo. Tolman read a paper on Gastric Ulcer.

The following officers were elected: President, E. E. Porter; vice presidents, F. H. Koepke and Jerome Thomas; delegate, Jerome Thomas, and secretary-treasurer, Saxton Pope.

SAXTON POPE, Secretary.

SONOMA COUNTY.

The Sonoma County Medical Society held its final meeting for the year of 1911, on the evening of December 7th, at the Hotel Overton, Santa Rosa.

Dr. J. W. Scamell of this city presented a most interesting and much appreciated paper, "Hernias Through the Pelvic Floor, with a Description of Barrett's Operation for Their Repair."

Officers for the ensuing year were elected as follows: President, Dr. R. M. Bonar; Vice-President, Dr. J. W. Scamell; Secretary, Dr. Jackson Temple; Treasurer, Dr. F. C. Pryor; Delegates to the State Convention, Dr. S. J. Peoples of Petaluma, with Dr. Jackson Temple as alternate.

The meeting was closed with a sumptuous banquet to the retiring officers, accompanied by a vote of appreciation for their past endeavors.

JACKSON TEMPLE, Secretary.

VENTURA COUNTY.

A meeting of the Ventura County Medical Society was held on December 18, 1911, and the new officers elected are as follows: Dr. Phillip Van Patten, Nordhoff, President; Dr. Ralph W. Avery, Oxnard, Vice-President; Dr. Allen Peek, Oxnard, Secretary and Treasurer, and Dr. Livingston, Oxnard, Delegate to State Meeting. Dr. Ogden Rafferty, Oxnard, was elected to membership. Dr. W. R. Livingston, Oxnard, read a good paper on surgical work in the throat, especially in regard to the tonsils.

RALPH W. AVERY, Secretary.

CALIFORNIA ACADEMY OF MEDICINE.

The California Academy of Medicine held a meeting December 18th, at which the following program was given:

1. The Management of Cases of Pulmonary Tuberculosis, with remarks on the treatment of such cases. Dr. Robert A. Peers, Medical Director of the Colfax School for Tuberculosis. Discussed by Major Brooks, U. S. A., Dr. P. K. Brown, Dr. Geo. H. Evans, Dr. Morton Gibbons and Dr. Robert A. Peers.

Dr. Harry I. Wiel was elected to membership.

The following officers for 1912 were elected: President, Dr. A. J. Lartigau; Vice-President, Dr. Ernest C. Dickson; Treasurer, Dr. Henry J. Kreutzmann; Secretary, Dr. Sol Hyman.

COOPER COLLEGE SCIENCE CLUB.

The Cooper College Science Club held a meeting on January 8, 1912, at which the following program was presented:

1—Presentation of Medical Cases. Wm. Fitch Cheney, M. D.

a. A case of Adherent Pericardium.
b. A case of Bronze Diabetes.
c. A case for Diagnosis.

Discussed by C. M. Cooper, M. D., Ernest C. Dickson, M. D., Wm. Fitch Cheney, M. D.

2—Presentation of Surgical Cases. Emmet Rixford, M. D. Discussed by James Eaves, M. D.

The following were elected to membership: Dr. Harrington B. Graham, Dr. Ernest Barry, Dr. Henry Horn, Dr. Cutting, Dr. Van Nuys, Dr. Bullard, Dr. H. Y. McNaught, Dr. V. F. Luccheti, Dr. W. W. Boardman.

At the end of the program refreshments were served.

Meeting adjourned.

THE DRUG EVIL.

A distinct step in the matter of the prevention of the illegal distribution of morphine has been achieved by the State Board of Pharmacy in its campaign in the city of San Francisco. Inspector F. A. Sutherland, who has the matter in charge for this board, has been successful in having his evidence so well in hand before bringing the facts to the notice of the public prosecutors, that in nearly all of the cases presented to the court for judgment the defendants plead guilty.

The case of Dr. Jesse C. Anthony calls for special comment. The doctor, who had written prescriptions for shocking quantities of morphine, entered a plea of "not guilty" and stood for trial in the court of Police Judge Weller. The prosecution, conducted by Mr. O'Connor, with whom was associated Senator Cutten ably assisted by Dr. George Franklin Shiels, was able to introduce in evidence three prescriptions written by Dr. Anthony for a man about whom he knew nothing. This man testified that he, a total stranger to the doctor, entered his office and upon the simple statement that he was a morphine-fiend obtained a prescription for one dram of morphine—for two dollars and a half; and at a subsequent visit three weeks later he got—for the same price.—two prescriptions each for one ounce of the drug and one of them dated a month in advance. The doctor, before writing the first prescription, said that he had made a physical examination of his "patient" and that it was as complete as "was necessary under the circumstances." He "felt the pulse to get the tension on the arteries."

In his defense Dr. Anthony admitted having written the three prescriptions introduced; but claimed that they were written in good faith for a person to whom he stood in the relation of a physician ministering to his physical needs. His contention was that he had begun a preliminary course for the cure of the morphine-habit according to his "customary method."

The method employed by the doctor is simple and, as he testified under oath, efficacious. The patient is filled up with morphine—"the fuller the better" hence the prescriptions for somewhat more than the usual quantity of the drug—"so as to prepare him for the antidote when it is given." Any hint as to just what is the antidote was not brought out at the trial; but the cross-questioning of Mr. O'Connor brought to light the fact that the preliminary treatment was to continue until the "patient" should be able to raise one hundred dollars to pay for the complete cure.

The magistrate was unable to see that Doctor Anthony had written the prescriptions in good faith, particularly as he had given his "patient" no directions as to how much of the medicine he should take, or how often it should be exhibited, so he found him guilty as charged. A sentence of one hundred dollars fine was imposed, from which we understand Doctor Anthony will appeal.

Doctor Jesse C. Anthony, of the Eclectic school, had his license to practice medicine in the State of California revoked by the State Board of Medical Examiners on August 5, 1908, for advertising "Soteria Medical Institute" in a manner "which is intended or has a tendency to deceive the public . . . and so be harmful . . . to public morals and safety." The advertisement purported to "cure consumption in any of its forms in 6 to 16 weeks. Syphilis or scrofula in any stage in 3 to 14 days . . . cancer without knife, plaster, powder or paste."

In 1910 Doctor Anthony applied to the State Board of Examiners for a rehearing in the matter of the revocation of his license. This hearing was held; but, so far as we can learn at the present writing, the complaining witness was not summoned. However, the license was restored to the doctor "under the belief that Dr. Anthony had been sufficiently punished," according to the minutes of this session of the Board (April 4, 1910).

It is of no small moment in this connection to refer to the opinion rendered to the State Board of Medical Examiners by their attorney in reference to the restoration of the license referred to above. This opinion conveys to the reader a very clear idea of the weakness of our laws governing the powers of the Board of Medical Examiners in the matter of revoking licenses of those deemed by them guilty of offenses demanding such revocation. The attorney states that it is his opinion that if a case of this sort were carried to the higher courts, the action of the board would not be upheld, due in large part to the loose wording of the statutes. This is a matter for the serious consideration of the Committee on Legislation of the State Medical Society.

THE OWEN BILL.

Sixty-second Congress, First Session—S. 1.

In the Senate of the United States, April 6, 1911, Mr. Owen introducing the following bill, which was read twice and referred to the Committee on Public Health and National Quarantine:

A bill to establish a Department of Health and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there be at the seat of government an executive department known as the Department of Health, and a Director of Health, who shall be the head thereof; and the provisions of title four of the Revised Statutes, including all amendments thereto, are hereby made applicable to said department. The Director of Health shall be appointed by the President, by and with the advice and consent of the Senate, at a salary of
dollars per annum and with tenure of office like that of the heads of the other executive departments. And said Director shall cause a seal to be made for the Department of Health, of such device as the President approves, and judicial notice shall be taken of said seal.

Sec. 2. That there be in the Department of Health an assistant to the Director of Health, designated and known as the Commissioner of Health, who shall be a skilled sanitarian, appointed by the President, by and with the advice and consent of the Senate, who shall serve at the pleasure

of the President, and who shall receive a salary of dollars per annum. The Commissioner of Health shall perform such duties as are required by law and such as are prescribed by the Director of Health. There shall be also a chief clerk, a disbursing clerk, and such other employees as Congress may from time to time authorize. The Auditor for the State and other departments shall receive and examine all accounts of moneys paid in and of moneys expended on account of the Department of Health, and shall certify the balance arising thereon to the Division of Bookkeeping and Warrants of the Treasury Department, and forthwith send a copy of each such certificate to the Director of Health.

Sec. 3. That it be the province and duty of the Department of Health to foster and promote all matters pertaining to the conservation and improvement of the public health and to collect and disseminate information relating thereto. Provided, That this act shall not be construed as attempting to authorize the Department of Health to exercise or attempt to exercise, without express invitation from the chief executive or other proper authority of the State, any function belonging exclusively to such State, or to enter any premises in any State without the consent of the owner or occupant thereof; but the Director of Health, upon request of the chief executive or other proper authority of any State, Territory, the District of Columbia, or any insular possession, may detail for limited periods an officer or officers, employee or employees, from the Department of Health to assist the health authorities of such State, Territory, District or insular possession in protecting and promoting the health of the people of such jurisdiction. And provided further, That the Department of Health established by this act shall have no power to regulate the practice of medicine or the practice of healing, or to interfere with the right of a citizen to employ the practitioner of his choice within any State of the Union, and all appointments within the department, including the head of the department, shall be made without discriminating against any school of medicine or of healing.

Sec. 4. That to the Department of Health are hereby transferred the following bureaus, divisions and other branches of the Government, and all that pertains to them, and they and each of them shall remain under the supervision and direction of the Director of Health until otherwise directed by law, namely:

(a) From the Department of the Treasury is transferred the Public Health and Marine Hospital Service.

(b) From the Department of Agriculture is transferred that part of the Bureau of Chemistry charged with the investigation of the adulteration of foods, drugs, and liquors, and with the execution and enforcement of the Act of Congress entitled "An Act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes," approved June thirtieth, nineteen hundred and six.

(c) From the Department of Commerce and Labor is transferred the Division of Vital Statistics, Bureau of the Census.

And the President is hereby authorized to transfer to the Department of Health at any time either the whole or any part, as to him may seem best, of any bureau, division, or other branch of the Government engaged in work pertaining to the public health, except the Medical Department of the Army and the Bureau of Medicine and Surgery of the Navy.

And each and every function, authority, power, duty, and jurisdiction, of whatsoever character it may be, vested at the time of any transfer aforesaid in the head of the executive department from which such bureau, division, or other branch of the Government is transferred, shall, to the extent to which such function, authority, power, duty or jurisdiction pertains to such bureau, division, or other branch of the Government, immediately upon such transfer become vested and thereafter remain vested in the Director of Health.

All land, buildings, furniture, apparatus, equipment, and property of whatsoever description, and all official records and papers, in the custody of any executive department from which any bureau, division, or other branch of the Government is transferred as aforesaid and pertaining to the business of such transferred bureau, division, or other branch of the Government, shall at the time of such transfer, or as soon thereafter as practicable, and in so far as such action can be taken without hindering the work of the executive department from which such transfer is made, be given over into the custody of the Department of Health. And all unexpended balances of appropriations available at the time of such transfer for the use of any such transferred bureau, division, or other branch of the Government, or which may become available thereafter, shall be and remain available, in similar manner and to the same extent as if no transfer had been made.

Sec. 5. That within the Department of Health there shall be the following bureaus:

a, Bureau of Sanitary Research;
b, Bureau of Child Hygiene;
c, Bureau of Vital Statistics and Publications;
d, Bureau of Foods and Drugs;
e, Bureau of Quarantine;
f, Bureau of Sanitary Engineering;
g, Bureau of Government Hospitals;
h, Bureau of Personnel and Accounts.

and the Director of Health is hereby authorized to arrange and rearrange from time to time, with the approval of the President, the functions, duties, personnel, papers, records, and property, and the work, resources, and equipment generally, coming into the jurisdiction and control of the Department of Health by the operation of this Act, so as most efficiently and economically to organize and maintain the several bureaus herein named and such divisions and offices thereof as to said Director seems proper; but in arranging and rearranging the personnel, the rank, pay, and allowances of the officers of the Public Health and Marine Hospital Service commissioned at the time of the transfer of that service to the Department of Health shall not, by reason of anything in this Act contained, be diminished. And the Director of Health may call upon the heads of other executive departments for information in their possession whenever such information is needed for the efficient and economical working of the Department of Health.

Sec. 6. That the President is hereby authorized to detail officers and employees from any of the several executive departments of the Goverment for duty under the Director of Health when so requested by said Director, and to detail officers and employees in the service of the Department of Health to any of the other executive departments upon request of the head of such department, provided such detail can be made without prejudice to the public service, to carry into effect the purpose and intent of this Act; but officers and employees so detailed shall receive no additional compensation, but shall be paid such actual and necessary expenses as they incur in the discharge of their duties.

Sec. 7. That the Director of Health may, in his discretion and with the approval of the President, appoint an advisory board of not more than seven members, to confer with him upon his request, from time to time as he deems necessary, concerning the work of the Department of Health and the health of the people. The members of said board shall be selected because of their special knowledge of mat-

ters relating to the public health, and each shall hold office for a term of seven years or until his successor is appointed, except that the appointments first made, and appointments thereafter made to fill unexpired terms and terms of members who have held over beyond the periods of their original appointments, shall be made so that not more than one member shall retire during any one fiscal year. No member of any such advisory board shall receive any compensation for his services, but each shall be paid all actual expenses necessarily incurred in the discharge of his duties. And from and after the passage of this Act the advisory board for the Hygienic Laboratory created by section five of an Act entitled "An Act to increase the efficiency and change the name of the United States Marine Hospital Service," approved July first, nineteen hundred and two, be, and the same hereby is, abolished.

Sec. 8. That the Director of Health may, whenever in his judgment public interests would be promoted by so doing, invite the duly constituted health authorities of all or of any of the States, Territories, the District of Columbia, and insular possessions as to him may seem advisable, each to send one delegate to confer with him or his duly appointed representative or representatives and with each other, at such time and place as he may designate, concerning any particular matter or matters relating to the public health; and it shall be the duty of the Director of Health, upon the written application of the duly constituted health authorities of not less than five States, Territories, the District of Columbia, or insular possessions, stating the particular matter or matters which it is desired to consider, to appoint a time and place, and to call a conference of the health authorities of the States, Territories, the District of Columbia, and insular possessions that united in the request therefor, and personally or through his duly appointed representative or representatives to be present at such conference; but every State, Territory, the District of Columbia, and insular possession shall be notified of every conference, and if practicable be afforded an opportunity of being present and participating in its proceedings. And from and after the passage of this Act annual and other conferences of State and Territorial boards of health, quarantine authorities, and State health officers, provided for by section seven of an Act entitled "An Act to increase the efficiency and change the name of the United States Marine Hospital Service," approved July first, nineteen hundred and two, be, and the same are hereby, abolished.

Sec. 9. That, except as expressly provided in this Act, nothing herein contained shall be construed as limiting or abrogating any function, right, or duty imposed by law upon any existing bureau, division, or other branch of the Government; but such bureaus, divisions, and other branches of the Government as are by this Act or by authority thereof transferred to the Department of Health shall continue, under direction of the Director of Health, to have such functions, duties, and rights as they have at the time of such transfer; and in the case of such bureaus, divisions, and other agencies of the Government as are transferred in part only, the part not transferred shall continue to have and to exercise all such functions, duties, and rights, except such as specifically relate to the part transferred to the Department of Health, in the same manner and to the same extent as if no such transfer had been made.

Sec. 10. That the Director of Health shall annually submit to Congress a report in writing showing the operations of the Department of Health during the last preceding fiscal year, which report shall give an account of all moneys received and all moneys disbursed on account of such operations. He shall make such other reports from time to time as may be required by the President, or by either House of Congress, and such as are in his judgment necessary or expedient.

Sec. 11. That ——— dollars be, and the same are hereby, appropriated to carry into effect the provisions of this Act, out of any money in the Treasury not otherwise appropriated.

Sec. 12. That all Acts and parts of Acts contrary to the provisions of this Act or inconsistent therewith be, and the same are hereby, repealed.

Sec. 13. That this Act shall take effect on and after July first, nineteen hundred and twelve.

CLINIC REPORT.

Following is a report of the number of cases handled in the Ear, Nose and Throat Clinic of Stanford University Medical Department:

Total cases handled during year 1911.....1515

Ear.

External Ear.

Cerumen	69
Dermatitis	5
Folliculitis	11
Diffuse inflammation	8
Eczema	8
Strictures	4
Foreign bodies	4

Middle Ear.

Eustachian tube affection	9
Myringitis acuta	2
Trauma to the drum	4
Tubo-tympanic catarrh	64
Secretory catarrh	2
Catarrhal adhesion process	22
Otosclerosis	3
T. B. of middle ear	1
Acute non purulent inflam. of mid. ear	2
Acute purulent inflam. of mid. ear	22
Chronic purulent inflam. of mid. ear	98
Acute mastoiditis	7
Chronic mastoiditis	4
Brain abscess	1

Internal Ear.

Serous labyrinthitis	1
Purulent labyrinthitis	1
Haemorrhages into the labyrinth (Menieres)	2
Lesion of the internal ear (indefinite)	23
Labyrinthine syphilis	5
Diseases of the 8th nerve	1
Fracture of temporal bone	2
Facial paralysis	1
Cerebellar tumor	1
Deaf mute	1

Nose.

Septum deformities	170
Trauma to external nose	3
Eczema	2
Syphilis	3
Acute rhinitis	8
Simple chronic catarrh	8
Hypertrophic chronic catarrh	46
Atrophic simple chronic catarrh	13
Ozena	8
Specific atrophic rhinitis	2

Infectious Granulomata.

Syphilis	6

Circumscript Inflammations.

Perforating ulcer of septum	3
Septum abscess	1

Tumors.

Fibroma (polypi)	22

Accessory Sinus Inflammations.

Maxillary sinus inflammation	14
Frontal sinus inflammation	7
Combined sinus inflammation	14

Naso Pharynx.

Acute inflam. of pharyngeal lymphatics	11
Chronic inflam. of pharyngeal lymphatics	30
Hypertrophy (adenoids)	452

Neuroses.

Sense of smell	2
Sense of touch	1
Parasthesia	1
Reflex neuroses of nose	5
Foreign bodies	3
Epistaxis	9

Throat.

Syphilis of tonsils	2
Angina acuta	22
Angina acuta simplex	6
Angina lacunaris	6
Angina phlegmonosa	4
Tonsilitis chronica simplex	3
Hyperplasia of tonsils	489
Oesophageal stenosis	1

Larynx.

Chronic laryngitis	19
Tuberculosis	10
Syphilis	3
Acute laryngitis	11
Paralysis of vocal cords	7
Geographical tongue	1

HISTORY OF A PECULIAR CASE.

To the Editor of the State Journal:—

The case notes as follows:

Age 14 years. Native of Colorado. Arrived here June 1, 1911; always healthy and active.

About November 1st noticed coryza, chills and fever progressed. November 5th, eruption like measles over backs of fingers and hands. These papules followed the usual course of pemphigus; about this time the eyeballs and lids became intensely congested, also the mouth, tongue and throat—at first covered with thick fur, then became raw and bleeding, while the gums also became spongy and bleeding. The eruption came next on limbs and buttocks, the palms and soles remained free.

The fever at first ranged from 100.5° ax., in the morning to 104° in the evening; pulse was about 90, while appetite was fair and the bowels normal. Had delirium first night of eruption.

Eruption appeared on 7th day after feeling ill, turned to vesicles about 2nd day, coalesced in two days more and absorbed in three or four days. Few vesicles turned turbid after one week, and after opening larger ones the skin peeled off and left a dark red stain.

Temperature 1st week 100.5° morning; 104.5° evening ax. Pulse 86-100. Respiration normal or very slightly hurried.

On November 19th pulse suddenly became weak and right lung showed signs of congestion. Pulse 120-143, respiration 40, temperature 101.5° morning; 103° evening.

November 22nd patient improved greatly but had a bad night on 22nd; restless and great pain on inspiration.

Odor very pronounced and mouse-like. The papules turned vesicles in 24 hours or less and soon formed bullae which absorbed or disappeared in some way without breaking until a little later when the contents of one large bleb on arm became milky.

The chills stopped about the 7th of November. Urine normal throughout and no sweating until later on when sweating was profuse for a couple of days, the rest of the time the skin was dry and hot.

The bronchi were intensely congested and breathing difficult at times, expectoration of mucus, no blood.

Eruption about equal on flexor and extensor surfaces, none on scalp, very little on face.

On November 23rd patient worn out, symptoms increased in severity, pulse 140-50, great cardiac weakness. About 6 p. m. moist rales very marked over both lungs and cyanosis very marked, respiration very rapid and pulse 160. Patient became unconscious and died at 3 a. m. on November 24th.

O. W. SINCLAIR, M. D.

BOOK REVIEWS

Ophthalmic Myology. By G. C. Savage, M. D. Second Edition. Pub. by Author, Nashville, Tenn., 1911.

Anyone who knows Dr. Savage or has listened to his enthusiastic discussion of the principles of ophthalmology will at once anticipate the value of this book. As a book for study and reference it is certainly to be recommended to all ophthalmogists. It will require study because its subject is more or less complex and is treated in a most scientific manner, involving higher mathematics. As a book of reference it is indispensable because it is so comprehensive. While the details of operative technic and some minor features may be points of difference or debate, the main discussion and diagnosis is standard and safe to follow entire. After a careful review of the anatomy and physiology of the ophthalmic musculature, the author takes up in good order orthophoria, heterophoria and heterotropia. No discussion of the subject matter is advisable here because it is complete and up to date. But I should like to call attention to the author's treatment of heterotropia, especially cases of comitant heterotropia or strabismus. He shows conclusively that such cases should be seen early—not later than the fourth or fifth years and as young as twelve months; also that the early treatment is only started when we correct the ametropia with glasses but includes most painstaking, patient, and persistent effort to develop vision in the amblyopic eye and binocular vision and fusion with both eyes. The author explains all of the better exercises and modes of treatment and, finally, indications for operations.

E. W. A.

Diseases of the Digestive Canal (Oesophagus, Stomach, Intestines.) By Dr. Paul Cohnheim, Specialist in Diseases of the Stomach and Intestines in Berlin. Edited and translated by Dudley Fulton, M. D., Assistant Professor of Principles and Practice of Medicine, University of California College of Medicine, Los Angeles Department. Second Edition. Cloth. Price $4. J. B. Lippincott Co., Philadelphia, 1911.

In translating the second German edition of this work, the editor has greatly enhanced its value by adding thereto short articles on esophagoscopy, sigmoidoscopy, gastric and duodenal hemorrhages. The study of abnormalities of the alimentary canal by means of the fluoroscope and X-Ray plate is likewise included by the translator, and the collection of skiagraphs which he has inserted in Cohnheim's most practical book render the whole a most useful work, which can certainly be highly commended. Let it not be forgotten that Cohnheim considers the anamnesis the most important element in diagnosticating gastro-intestinal disease—and alas! how few realize this fact.

R. B.

Case Histories in Medicine, Illustrating the Diagnosis, Prognosis and Treatment of Disease. By Richard Cabot, Assistant Professor of Clinical Medicine, Harvard Medical School. Second Edition, revised and enlarged. Cloth, Price $3. Boston, W. M. Leonard, 1911.

There is probably nothing so stimulating to a class in internal medicine, as to be quizzed on a

so-called 'theoretical case." Given a few presenting symptoms, to realize their full significance, their probable causes, and then to proceed to the orderly eliciting of objective signs is excellent training for any medical man. Cabot has gone further in this work than in his book on Differential Diagnosis, which we took pleasure in lauding some 9 months ago (Cal. State Jour. Med., Vol. IX, No. 4, p. 177, 1911) and here gives us in the consideration of each case, discussions on prognosis (so important from the standpoint of patient and family) and treatment. No practicing physician can study this book without deriving some benefit and stimulus from it. R. B.

Electricity, Medical and Surgical. By Charles S. Potts, M. D. Published by Lea & Febiger, Philadelphia and New York, 1911.

The author has compiled an eminently practical volume. Apparently no application of electricity, as a diagnostic, prognostic, or therapeutic agent has been omitted. The sections on Electro-physics and Electro-physiology will be welcomed by those physicians who work intelligently and honestly. If more complete, the chapters on diagnosis and prognosis would be of greater assistance to the neurologist. The therapeutic side is treated in an able manner; but why in so excellent and ethical a work should certain diseases, as for instance, obesity, diabetes and chorea, be mentioned as amenable to electric treatment? The section on the Roentgen ray is a valuable addition. The drawings and charts are clear and accurate. R. L. A.

Orthopedic Surgery. Ridlon, A. M., M. D. Practical Medicine Series, 1911, Volume VII. Published by Year Book Publishers, Chicago.

That portion of the book which is devoted to Orthopedics is a sort of "Multum in Parvo." It is concerned with many subjects, not a few of which are still much mooted problems, all of which are considered by men who speak with definite authority.

The fact that Ridlon does not always agree with the writers, whose papers he has discussed, is not distracting but rather is it refreshing, as it privileges the reader to think and prompts the reader to inquire.

The many subjects considered are concisely abstracted, carefully arranged, very ably discussed and offer much that is recent even though this much may not be final.

It is not pleasant to find so much emphasis placed upon "The Age Limit" by the author of the paper on Congenital Dislocation of the Hip. It is pleasant, however, to find an expression of unanimity in the paper on The Treatment of Club Feet and it is indeed gratifying to note that the operation of Resection of the Hip in the treatment of Hip-Disease is not only being abandoned but also condemned. C. C. CRANE.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. Witthaus, A. M., M. D., Professor of Chemistry, Toxicology and Medical Jurisprudence in Cornell University, and Tracy C. Becker, A. B., LL. B., Counselor at Law, Professor of Criminal Law and Medical Jurisprudence, University of Buffalo and numerous collaborators. William Wood & Co., New York.

This is an exhaustive work of twelve hundred and seventy-three pages by two authoritative men. From the book standpoint may be said, that the headings on the right hand pages are an excellent feature, showing at a glance, the contents below. The paragraphing is admirably done, such words as lethal dose, duration, symptoms, elimination, treatment, postmortem appearances, analysis and statistics being printed in heavy faced type as they first occur in the text, thus clearly establishing location when one is consulting the book with a desire to find a special fact in a brief space of time. A toxicologist can readily see that this book was written by a chemist and a lawyer. It is too large a volume for brief systematic description so the reviewer can only speak in a general way.

No chemist can tell the true value of a book of this type unless he works with it, yet at a glance the treatise shows a clearness and a completeness that place it at once as a book of value not only as an authority, but a laboratory guide as well.

FRANK S. GREEN.

RED CROSS.

The American Red Cross desires again to invite attention to the exhibition in connection with the Ninth International Red Cross Conference, which will be held in Washington, D. C., from May 7 to 17, 1912.

The exhibition will be divided into two sections, which will be styled Marie Feodorovna and General. The former is a prize competition, with prizes aggregating 18,000 rubles, or approximately $9000, divided into nine prizes, one of 6000 rubles, approximately $3000; two of 3000 rubles each, and six of 1000 rubles each.

The subjects of this competition are as follows:

1. A scheme for the removal of wounded from the battlefield with the minimum number of stretcher bearers.
2. Portable (surgeons') washstands, for use in the field.
3. The best method of packing dressings for use at first aid and dressing stations.
4. Wheeled stretchers.
5. Transport of stretchers on mule back.
6. Easily folding portable stretchers.
7. Transport of wounded between warships and hospital ships and the coast.
8. The best method of heating railway cars by a system independent of steam from the locomotive.
9. The best model of portable Roentgen apparatus, permitting utilization of X-rays on the battlefield and at first aid stations.

The maximum prize will be awarded to the best exhibit, irrespective of the subject, and so on.

The General Exhibit is again divided into two parts; the first will be an exhibition by the various Red Cross Associations of the world. The second will be devoted to exhibits by individuals or business houses of any articles having to do with the amelioration of the sufferings of sick and wounded in war, which are not covered by the Marie Feodorovna Prize Competition for the year. While the American Red Cross will be glad to have any articles pertaining to medical and surgical practice in the field, it is especially anxious to secure a full exhibit relating to preventive measures in campaign. Such articles will be classified as follows:

1. Apparatus for furnishing good water in the field.
2. Field apparatus for the disposal of wastes.
3. Shelter, such as portable huts, tents and the like, for hospital purposes.
4. Transport apparatus (to prevent the suffering of sick and wounded) exclusive of such apparatus as specified for the Marie Feodorovna Prize Competition.

As with the Marie Feodorovna Prize Competition, for this country only articles having the approval of the Central Committee of the American Red Cross will be accepted.

Diplomas will be awarded for exhibits in this section of the exhibition as approved and recommended by the jury.

Further information may be obtained from the Chairman, Exhibition Committee, American Red Cross, Washington, D. C.

It is perhaps to apparatus having to do with prevention of disease in armies that the energies of Americans have been specially directed since the Spanish-American War. Therefore, the last-mentioned section of the exhibition should make an appeal to them.

LANE LECTURES, 1912.

The thirtieth annual course of Lane lectures will be delivered in Lane Hall, Cooper Medical College, beginning Friday evening, January 12, at 8 o'clock, and continuing every alternate Friday evening thereafter, until the lectures are given. These lectures are free and no ticket of admission is required. Program: Friday evening, January 12, "Perils of Eating," Dr. William F. Cheney; Friday evening, January 26, "Maintenance of Health in Children," Dr. Langley Porter; Friday evening, February 9, "Development of the Senses," Prof. Oliver P. Jenkins, Professor of Physiology and Histology, Stanford University; Friday evening, February 23, "Immunity from Disease" (lantern slides), Dr. Frederick P. Gay, Professor of Pathology, University of California; Friday evening, March 8, "Nervous People—What and Why They Are," Dr. H. C. MacClenahan; Friday evening, March 22, "Louis Pasteur," Prof. Hans Zinsser, Professor of Bacteriology, Stanford University; Friday evening, April 5, "Popular Misconceptions in Regard to the Eye" (lantern slides), Dr. E. C. Sewall.

DR. GEORGE W. McCOY.

Dr. George W. McCoy, of the Marine Hospital Service, who was recently ordered to Honolulu as Director of the U. S. Leprosy Investigation Station, has been detailed as Sanitary Adviser to the Governor of Hawaii, succeeding Surgeon Blue, who has been ordered to Washington. An extensive campaign against mosquitoes is being carried on in Honolulu and the Hawaiian Government is vigorously pressing forward many sanitary reforms.

NEW AND NON-OFFICIAL REMEDIES.

Since December 1 the following articles have been accepted by the Council for new and non-official remedies: Ciose (Fairchild Bros. & Foster); Bacillary Milk (Fairchild Bros. & Foster); Lactampoule (Fairchild Bros. & Foster); Propaesin (Parmele Pharmacal Company); Dextri-Maltose (Mead, Johnson & Co.); Enemose (Fairchild Bros. & Foster).

TYPICAL "PATENT MEDICINE" LITERATURE.

Dear Doctor:—

Not so many years ago the white man could not enter the tropics, because malaria laid him low. Then from the tall cinchona trees the chemists Pelletier and Caventou extracted the alkaloid Quinine, and with the aid of this specific the white man has conquered the equatorial regions.

Dioradin has aided so many consumptives to recover their health, that we are justified in announcing that a specific for tuberculosis is at last in the hands of the medical profession. When Koch proved that consumption was caused by a germ, every physician prayed for a remedy that would be harmless to the human tissue, but at the same time would destroy this germ after it gained access to the body. This is exactly what our radio-active mentholated iodine preparation does, and therefore produces the best results ever obtained in the treatment of tuberculosis.

Interesting clinical reports on request.

Very truly yours,

DIORADIN COMPANY.

BOARD OF EXAMINERS, DECEMBER SESSION.

Passed.

School of Medicine.	Date of Graduation.	Percentage.
Coll. of P. & S., Los Angeles, Cal	6, 15, 11	76. *
Coll. of P. & S., S. F., Cal	5, 19 10	79. ***
Cooper Med. Coll., S. F., Cal	5, 12, 11	81.7
Univ. of California	5, 17, 10	89.2
Univ. of California	6, 1, 11	87.5
Univ. of California	6, —, 11	86.2
Univ. of California	6, 1, 11	85.7
Univ. of California	—, —, 11	84.6
Univ. of California	6, 1, 11	78.1
Univ. of S. Cal	6, 15, 11	91.6
Albany Med. Coll., N. Y	5, 3, 07	81.8
Am. Medical Missionary Coll., Ill	6, 27, 99	86.5 plus 5-91.5
Am. Medical Missionary Coll., Ill	6, 23, 03	81.4
Baltimore Med. Coll., Md	5, 12, 03	80.2
Barnes Med. Coll., Mo	4, 12, 00	86.8 plus 5-91.8
Bennett Med. Coll., Ill	5, —, 08	85.5
Bennett Med. Coll., Ill. (Loyola Univ.)	9, 20, 11	77.4
Bowdoin Med. Sch., Me	6, —, 11	78.7
Cleveland Coll. P. & S., O	5, 22, 07	75.7
Coll. P. & S. of Baltimore, Md	6, 6, 10	78.3
Coll. P. & S., Chicago, Ill. (Univ. of Ill.)	5, 26, 03	82.3
Coll. P. & S., Chicago, Ill	6, 7, 10	79.8
Coll. P. & S., Chicago, Ill	6, 7, 10	79.8
Coll. P. & S., Columbia Univ., N. Y	6, 2, 09	91.
Coll. P. & S., Columbia Univ., N. Y	6, 13, 94	83.1 plus 5-88.1
Coll. P. & S., Keokuk, Ia	3, 16, 97	79. plus 5-84. *
Cornell Univ., N. Y	6, 9, 09	91.8
Cornell Univ., N. Y	6, 3, 03	91.
Geo. Washington Univ., D. C	6, 8, 10	80.7
Hahn. Med. Coll., Pa	5, 15, 01	80. plus 5-85.
Medico-Chirurgical Coll., Pa	5, 28, 04	
Harvard Univ. Med. Sch., Mass	6, 27, 00	80.3 plus 5-85.3
Jefferson Med. Coll., Penn	6, 7, 09	82.4
Johns Hopkins Univ. Med. Sch., Md	6, 14, 04	87.4
Kansas Univ. Sch. of Med., Kans	3, 2, 80	83.1 plus 15-98.1
Kentucky Sch. of Med., Ky	6, 18, 91	71.2 plus 10-81.2**
Louisville Med. Coll., Ky	7, 14, 06	77.6
Med. Coll. of Ohio	4, 9, 96	80.9 plus 5-85.9

Med. Sch. of Maine	6, —, 09	75
N. W. Univ. Med. Sch., Ill	6, 4, 08	91.2
N. W. Univ. Med. Sch., Ill	6, 14, 11	85.9
N. W. Univ. Med. Sch., Ill	3, 4, 79	70.7 plus 15-85.7
N. W. Univ. Med. Sch., Ill	6, 14, 11	83.4
N. W. Univ. Med. Sch., Ill	6, 14, 11	81.1
N. W. Univ. Med. Sch., Ill	6, 14, 11	81.0
N. W. Univ. Med. Sch., Ill	6, 14, 11	80.3
Ohio Med. Univ., Ohio	4, 5, 98	72.8 plus 5-77.8
Royal Coll. Med., Edinburgh, Scot	7, 13, 83	75.2 plus 10-85.2
Royal Coll. P. & S., London, Eng	4, —, 04	90.5
Royal Univ., Turin, Italy	—, —, 06	78.
Rush Med. Coll., Ill	5, 24, 99	86.4 plus 5-91.4
Rush Med. Coll., Ill	5, 27, 96	85.2 plus 5-90.2
Rush Med. Coll., Ill	6, 14, 11	89.6
Rush Med. Coll., Ill	2, 22, 81	73.9 plus 15-88.9
Rush Med. Coll., Ill	6, 17, 03	83.4
Rush Med. Coll., Ill	3, 23, 11	82.1
Rush Med. Coll., Ill	6, 21, 01	71.4 plus 5-76.4
State Univ., Iowa, Coll. of Med., Iowa	6, 15, 10	86.5
State Univ., Iowa, Coll. of Med., Iowa	6, 15, 10	76.2
State Univ., Iowa, Coll. of Hom. Med., Iowa	6, 15, 10	81.3
Syracuse Univ. Med. Coll., N. Y	6, 7, 98	83.2 plus 5-88.2
Syracuse Univ. Med. Coll., N. Y	6, 11, 91	68.9 plus 10-78.9
Tulane Univ., La. (Med. Dept.)	5, 8, 07	85.5
Univ. of Athens, Greece	12, 20, 02	79.1*
Univ. & Bellevue Hosp. Med. Coll., N. Y	6, 9, 02	82.1
Univ. of Mich., Med. Dept	6, 28, 94	85.3 plus 5-90.3
Univ. of Mich., Med. Dept	6, —, 11	89.4
Univ. of Mich., Med. Dept	6, —, 04	87.2
Univ. of Mich., Med. Dept	6, —, 03	85.1
Univ. of Mich., Med. Dept	6, —, 94	75.0 plus 5-80.
Univ. of Mich., Med. Dept	6, 22, 05	78.6
Univ. Minnesota	6, 4, 03	78.1
Univ. of Penn	6, 18, 02	85.8
Univ. of Penn	6, 21, 11	83.9*
Univ. of Penn	6, 13, 06	82.9
Univ. of Penn	6, 14, 05	78.7
Univ. of Pittsburg, Penn	6, 15, 10	83.9
Univ. of St. Louis, Mo	5, —, 08	80.3
Univ. of St. Louis, Mo	5, 22, 06	80.2*
Washington Univ., Med. Dept., Mo	4, 27, 99	83.5 plus 5-88.5
Wesleyan Univ., Med. Dept., Ohio	6, 15, 11	81.5
Western Reserve Univ., Med. Dept., Ohio	6, 12, 02	82.2
Woman's Med. Coll. of Penn	5, 31, 11	92.4
Woman's Med. Coll. of Penn	5, 20, 08	79.7

Failed.

Am. Med. Coll., St. Louis, Mo	5, 10, 98	57.4 plus 5-62.4**
Chicago Med. Coll., Ill	3, 30, 80	62.2 plus 15-77.2
Coll. P. & S., Chi., Ill. (Univ. of Ill.)	4, 2, 95	47.6 plus 5-52.6
Coll. P. & S., Chi., Ill. (Univ. of Ill.)	4, 13, 93	31.4
Coll. of P. & S., Md	4, —, 82	44.9 plus 10-54.9
Coll. of P. & S., Columbia Univ., N. Y	10, —, 96	63.4 plus 5-68.4
Hering Med. Coll. & Hosp., Ill	6, 2, 10	71.
Louisville Med. Coll., Ky	2, 27, 79	
Coll. P. & S., Keokuk, Iowa	2, 28, 82	49.2 plus 15-64.2
Marion-Sims Beaumont Med. Coll., Mo	5, 1, 02	67.4
Maryland Med. Coll., Md	5, 31, 11	51.5
Medico-Chirurgical Coll., Mo	3, 19, 03	70.5
Meharry Med. Coll., Tenn	3, 1, 04	50.8
Missouri Med. Coll., Mo	3, 29, 98	57.6 plus 5-62.6
Royal Univ. of Naples, Italy	12, 30, 03	67.8
Royal Univ. of Naples, Italy	12, 18, 03	51.2*
Rush Med. Coll., Ill	2, 20, 83	55.8 plus 10-65.8
Sioux City Coll. of Med., Iowa	5, 4, 04	58.6
St. Louis Univ. Med. Sch. (Sims-Beaumont Med. Coll.)	5, 19, 06	69.5*
Univ. of Athens, Greece	10, —, 99	54.7 plus 5-59.7
Univ. of Indianapolis, Ind	4, 24, 02	71.3*
Univ. of Louisville, Ky	6, 29, 05	56.8
Univ. of Mich	6, 30, 92	67.5 plus 5-72.5
Univ. of Minnesota	6, 4, 03	67.5
Univ. of Nashville	4, 30, 09	71.3
Univ. of Oregon	4, 17, 05	68.9

Osteopathy—Passed.

Am. Sch. of Osteopathy, Mo	6, 5, 11	78.6*
Am. Sch. of Osteopathy, Mo	6, 25, 03	75.2
L. A. Coll. of Osteopathy, Cal	6, 1, 11	84.8
L. A. Coll. of Osteopathy, Cal	6, 1, 11	80.7*
L. A. Coll. of Osteopathy, Cal	6, 1, 11	80.6*
L. A. Coll. of Osteopathy, Cal	6, 1, 11	79.5*
L. A. Coll. of Osteopathy, Cal	6, 1, 11	79.1*

L. A. Coll. of Osteopathy, Cal.	6, 1, 11	78*
L. A. Coll. of Osteopathy, Cal.	6, 1, 11	76.2
L. A. Coll. of Osteopathy, Cal.	6, 3, 09	75*
L. A. Coll. of Osteopathy, Cal.	6, 1, 11	75*
Pacific Coll. of Osteopathy, Cal.	6, 15, 11	90.6
Pacific Coll. of Osteopathy, Cal.	6, 15, 11	78.2*
Pacific Coll. of Osteopathy, Cal.	6, 15, 11	76.3
Pacific Coll. of Osteopathy, Cal.	6, 15, 11	75.8
Pacific Coll. of Osteopathy, Cal.	6, 15, 11	75

Osteopathy—Failed.

L. A. Coll. of Osteopathy, Cal.	6, 1, 11	72.3
L. A. Coll. of Osteopathy, Cal.	6, 1, 11	71*
L. A. Coll. of Osteopathy, Cal.	1, 26, 11	70.2
L. A. Coll. of Osteopathy, Cal.	6, 1, 11	68.1*
L. A. Coll. of Osteopathy, Cal.	6, 1, 11	67.4
L. A. Coll. of Osteopathy, Cal.	6, 2, 10	64**
L. A. Coll. of Osteopathy, Cal.	1, 26, 11	64**
L. A. Coll. of Osteopathy, Cal.	6, 1, 11	62.1
L. A. Coll. of Osteopathy, Cal.	1, 27, 10	61*
L. A. Coll. of Osteopathy, Cal.	6, 1, 11	60.7
L. A. Coll. of Osteopathy, Cal.	6, 1, 11	60.7
L. A. Coll. of Osteopathy, Cal.	1, 27, 10	53.9**
L. A. Coll. of Osteopathy, Cal.	6, 1, 11	31.9
L. A. Coll. of Osteopathy, Cal.	1, 28, 09	11.4
Pacific Coll. of Osteopathy, Cal.	6, 15, 11	72.6
Pacific Coll. of Osteopathy, Cal.	6, 15, 11	72.6*
Pacific Coll. of Osteopathy, Cal.	6, 23, 10	70.2**
Pacific Coll. of Osteopathy, Cal.	6, 15, 11	68.8
Pacific Coll. of Osteopathy, Cal.	6, 23, 10	58.7**

* Taken before.

New Licentiates.

M. J. Abramson, Lewis H. Athon, Margaret Banta, John V. Barrow, S. G. Bay, H. O. Beeson, Fred H. Bly, Phil Boiler, W. V. Brem, C. H. Brooks, J. H. Brooks, A. L. Brown, L. E. Buren, Wm. P. Burnham, E. Cleverdon, M. A. Cramer, A. H. Currie, L. S. Cushman, J. A. Cutting, Emory C. Day, F. J. Dingeman, Wm. H. Dower, Edw. W. Elliott, C. J. Elmer, T. F. Engstrom, E. L. Enochs, F. H. Folkins, C. E. Frost, L. C. Frost, M. C. Gates, W. A. George, E. G. Ghidella, W. G. Goffe, Chas. B. Griggs, A. W. Hammer, M. P. Hamrick, D. F. Harbaugh, W. F. Holman, R. W. Homer, A. A. Husser, C. E. Hyde, C. E. Ide, Edw. H. Jacobs, Joseph Jacobs, R. H. Johnson, Wm. J. Johnson, N. M. Jones, Wm. F. Jordan, E. A. Julien, M. G. Kennedy, G. E. Klingerman, L. E. Kress, O. H. Kress, C. J. Lander, R. S. Lavenson, T. O. Luckett, W. C. Mabry, H. V. Magnusson, A. C. Matthews, F. E. McCullough, B. E. Merrill W. I. Merrill, E. W. Mullen, C. F. Nelson, J. W. Nevius, N. G. Noble, A. A. Nusbaum, A. B. Perkey, F. J. Phelps, W. C. Porter, R. Purcell, L. E. Rauch, C. E. Reynolds, C. E. Robinson, H. Rochester, E. T. Rulison, Jr., N. M. Salter, J. W. Scott, H. P. Shattuck, A. Shyrock, S. C. B. Sorenson, P. H.Stephens, B. S. Stevens, A. E. Strong, J. N. Tavopoolos, F. Thomas, J. C. Urqhart, G. P. Waller, Jr., A. P. Ward, D. D. Weaver, W. E. Weddle, E. S. Weimer, C. G. Shipman, W. F. Wessels, C. G. Wharton, M. E. White, O. C. Willhite, P. M. Williams, M. Wiswall.

MILITARY HYGIENE.

To the Editor of the State Journal:

In accordance with a resolution passed at the Twentieth Annual Meeting of the Association of Military Surgeons of the United States, held at Milwaukee, Wisconsin, From September 26th to 29th, 1911, I have the honor to communicate with you with a view to promoting local symposia on Military hygiene, sanitary organization and supplies during the present winter. The purpose of such courses would be a patriotic one in that an attempt would be made to show the doctors of the country how they could render efficient service in time of war. Moreover, it appears probable that the courses could be made extremely interesting.

For any course of this character which can be arranged the Association will attempt to secure an instructor, either a medical officer of the regular establishment or of the organized militia. In fact, it may be safely taken for granted that instruction of this character can be provided for in almost any part of the country.

I desire to request you to bring this to the attention of the members of your association.

This letter is sent to the American Medical Association and to all the state societies.

Yours respectfully,

CHARLES LYNCH,
Major, Med. Corps, U. S. Army,
Secretary.

CHANGE OF ADDRESS.

McNeile, H. G., from 2636 E. 1st St., Los Angeles, to 3837 So. Hill, Los Angeles.

Percival, F. R., from 2462 W. Pico St., Los Angeles, to 945 So. Olive St., Los Angeles.

Pomeroy, J. L., from Union Trust Bldg., Los Angeles, to American Bank Bldg., Monrovia.

Bynum, J. C., from Sunnyvale, to Mountain View, Cal.

Ross, Thos. D., from Mountain View to Europe.

Osborne, Albert E., from San Juan to Santa Clara.

Nesbit, Jennie E., from Bank of San Jose Bldg. to Ryland Bldg., San Jose.

Lantz, Viola, from 378 So. 2nd, San Jose, to Ryland Bldg., San Jose.

Wolfe, Homer W., from City and County Hosp., San Francisco, to ——?

Ragland, W. A., from 321 East 15th St., New York, to ——?

Howell, Harriett, from Porter Bldg. to 1st Nat'l. Bank Bldg., San Jose.

Keith, Wm. E., from Porter Bldg. to 1st Nat'l. Bank Bldg., San Jose.

Reese, R. E., from San Jose to San Francisco.

Regli, Jos., from address unknown to 215 West San Fernando St., San Jose.

White, Margaret, from San Francisco to Agnew State Hospital, Agnew, Cal.

Cooper, J. H., from Mountain View, Cal., to Long Beach, Cal.

Campbell, Matilda, from Los Gatos to Ryland Bldg., San Jose.

Villian, A. J., from address unknown to 251 Hamilton Ave., Palo Alto.

Francis, L. H., from Tuolumne to Glen Ellen,

Russell, W. W., from address unknown to 718 D St., Marysville, Cal.

Johnston, Wm. R., from 119 49th St., Los Angeles to ——?

Davis, Fred J., from Butte Valley to Keddie, Cal.

Howard, Allen R., from Los Angeles to Dougherty-Shea Bldg., Santa Rosa.

Huffman, J. E., from Healdsburg to 15 Wellington Ave., San Francisco.

Lando, Milton E., from Ukiah to 1332 Linden Ave., Oakland, Cal.

Proctor, I. M., from address unknown to Petaluma.

Wilcox, W. J., from 576 E. 14th St., East Oakland, to 527 East 18th, East Oakland.

McCormack, Wm. A., from 1551 24th Ave., Oakland, to 2103 24th Ave., Oakland.

Bering, R. E., from 1521 Scott to 300 Page St., San Francisco.

McConkey, T. G., from 1156 Sutter St., San Francisco, to ——?

Rand, H. F., from Sanitarium (Napa Co.), to Glendale Sanitarium, Glendale, Cal.

Schacht, B. H., from Jackson, Cal., to West Point, Cal.

Schlageter, H. J., from 275 Post St. to 240 Stockton St., San Francisco.

Deckelman, Carlotta R., from Monterey to ——?

Jamison, W. T., from Pacific Grove to ——?

Sawyer, H. C., from 2428 Fulton St., to 291 Geary St., San Francisco.

Cohn, H. J., from address unknown to Thayer Bldg., Oakland.

Hanson, G. F., from 790 Fell St., to 555 Fillmore St., San Francisco.

Kierluff, H. N., from San Francisco to San Quention (Prison Physician.)

Russ, Raymond, from 240 Stockton to 126 Stockton St., San Francisco.

Ardenyi, Joseph, from 995 Market St. to 821 Market St., San Francisco.

Harris, E. L., from 1st Nat'l. Bank Bldg., Oakland, to ——?

Lendrum, B. A., from address unknown to Fort Bragg, Cal.

Davis, F. J., from address unknown to 19th and San Pablo, Oakland.

Knowles, C. W., from 391 Sutter St. to 177 Post St., San Francisco.

Thiele, Emil, from 672 Mission St. to 48 Turk St., San Francisco.

Wells, Geo. S., from Sierra Madre to Santa Barbara.

Allan, Robt. Thos., from address unknown to Pico Heights, Los Angeles, Cal.

Bell, C. A., from Round Mountain to Anderson, Cal.

Page, Jno. Evelyn, from Coronado to Box 474, Santa Barbara.

Riehl, F. W. E., from Express Blk., San Diego, to 1521 St. Charles St., Alameda.

Cummings, R. S., from Long Beach to Barlow Sanatorium, Los Angeles.

Davis, Geo. W., from 1170 Sutter St. to 1204 Sutter St., San Francisco.

Hunkin, S. J., from 2161 Sutter St. to 1155 Bush St., San Francisco.

Davis, Margaret J., from Bakersfield to ——?

Bell, C. A., from Round Mountain to Anderson, Cal.

Spencer, Wm. O., Selling Bldg., Portland, Ore.

Fraser, Donald, from address unknown to Vallejo, Cal.

Peterson, Edwin A., from address unknown to Vallejo, Cal.

Kenney, W., from 1246 9th Ave. to 135 Stockton St., San Francisco.

de Obarrio, P., from Alameda to 240 Stockton St., San Francisco.

Higgins, C. P., from East Oakland to ——?

Carolan, H., from 2319 Buchanan St. to 2198 Sutter St., San Francisco.

Watson, C. V. P., from Los Angeles to ——?

Butt, E. L., from address unknown to Redondo, Cal.

Kellogg, P. S., from National City, Cal.. to Ft. Yellowstone, Wyoming.

Gatchell, W. L., from Chico to Agua Caliente, Cal.

Graham, L. B., from Pacific Grove, Cal., to Ellis Island, N. Y.

Johnson, P. V. K., from Wright & Callender Bldg., Los Angeles, to Security Bldg., Los Angeles.

Chancellor, P. S., from Los Angeles to Illinois.

Abbott, Philip F., from address unknown to Oakland, Cal.

Carson, O. F., from 1310 Golden Gate Ave. to 897 Fulton St.

Krotoszyner, Martin, from 2672 Pine to 999 Sutter St., San Francisco.

Jacobs, Wm. R., from San Leandro to ——?

Eaton, Frank Blaney, from Macleay Bldg., Portland, Oregon, to Room 206 Medical Bldg., Portland, Oregon.

Breitstein, L. I., from 625 Ashbury St., S. F., to 240 Stockton St., S. F.

Davison, H. B., from Fruitvale to ——?

Lundstrom, S., from Oakland to ——?

Davies, G. W., from Lincoln to 1170 Sutter St., San Francisco.

Wicherski, O. G., from La Jolla to American Nat'l. Bank Bldg., San Diego.

Merritt, L. A., from Berkeley to ——?

Garrison, Chas. G., from address unknown to Box 547A Los Angeles, Cal. (R. F. D. No. 13.)

Blackwell, J. G., from Douglas Bldg., Los Angeles, to Fremont Hotel, Los Angeles.

Seymour, Elnora C., from Los Angeles to State Hygiene Laboratory, Berkeley, Cal.

Brown, E. M., from 1064 W. 7th to Story Bldg., Los Angeles.

Lutz, C. A., from address unknown to Mission and San Jose Sts., Irvington, Cal.

Rossini, Tacito, 700 Broadway, San Francisco,

Bettencourt, J. de S.. from address unknown to 251 Kearny St., San Francisco.

Thorpe, T. F., from Bakersfield to McKittrick.

Davis, E. W., from Berkeley to ——?

Haskins, A. J., from Oakland to ——?

NEW MEMBERS.

Pininger, S. E. D., Tracy, Cal.
Fraser, Donald, Vallejo.
Peterson, Edw. A., Vallejo.
McFarland, W. L., Benicia.
Bunnell, Edwin, San Francisco.
Rafferty, O., Oxnard, Cal.
Wrigley, Geo. C., Sonora.
de Obarrio, P., San Francisco.
d'Ercole, V. B., San Francisco.
Reis, H. W., San Francisco.
Leonard, J. V., San Francisco.
Schiro, S., San Francisco.
Plinez, J. K., San Francisco.
Schaller, W. F., San Francisco.
Mackintosh, W. C., San Francisco.

DEATHS.

Helm, T. W.. Bakersfield.
Creighton, C. J., Redlands.
Yelland, E. S., Los Gatos.
Smith, Q. C., San Diego.
Perrone, Josea, San Francisco.
Cooke, J. L., Banning, Cal.
Callen, J. A., Auburn, Cal.
Shurtleff, Benjamin, Napa, Cal.

RESIGNED.

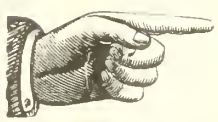
Bynum, J. C., Sunnyvale.
Fritschi, A. R., San Francisco.
Kellogg, W. H., San Francisco.
Reese, R. E., San Jose.

Just a Moment, Please!

Good, Gentle, Kind and Charitable Reader!

For those whose daily lives are led 'midst sickness, sorrow or the dead, 'tis fitting to relax a bit, drop care's cloak, cheer fleeting wit nor heed old raven's croak. And so these words of trivial jest, intended well—no matter 'bout the rest—were sped one night when all sat tight about the groaning board where man met man with wisdom stored but burdened not, for that occasion, with cares of any one's persuasion. The doctors in old San Francisco town put off the doctors' robe, relaxed the worried frown, divorced the mob and sat them down in friendly jollity one night in last November to have a dinner that they'll long remember. Alas! not every merry quip that passed that night from lip to lip is here set forth, for reasons multifarious —(and grouches are so plentiful an editor's life's precarious!) And so, good reader, generous and kind, please pardon iteration—but bear in mind these words were said in *jest*, not obfuscation.

(Once more, gentle reader! This matter has been so published that, if it shocks your sense of dignity, you may have these pages removed without doing damage to the remainder of this issue of the JOURNAL. See?)



(N. B.—Denoting humerous stuff: to be taken ad libitum, but not seriously.—Ed.)

NOTICE!

Original (but NOT Scientific) Articles.

Will all domestic and foreign readers and abstractors please note that the following articles (separately paged) were presented at a banquet of the San Francisco County Medical Society and are published at the request of that Society. They are not intended to be contributions to pure science, and if you so consider them, it is your own fault.

(The secretary of the S. F. County Medical Society, at the annual dinner, presented the following papers, and abstracts, all of them he said, although rejected by the executive committee, so unusual as to merit attention. The offended members, he stated, would thus no doubt be appeased, as well as convinced of his innocence in the matter of original rejection of their scientific contributions.)

THE TECHNIC OF SALVARSAN INJECTIONS.*

By DR. CHENOWON HAMEL JOSLIN,

Author of "Five Facts vs. Foolish Fakes," "Quaint Quacks I Have Quizzed."

From fellow practitioners I am continually hearing of their difficulties with salvarsan medication. There are even reports of very exciting, highly dramatic scenes. Quite recently I was told of a specialist encountering unusual trouble. Everything seemed bewitched. The vein wasn't to be found; then the needle broke; fortunately the vein was caught by the operator's long finger nail. At last with the second needle he got into the vein, but nothing would run through the needle and the patient began to complain. The needle was withdrawn and blown through; again boiled and inserted. The solution now ran through it, but under the skin. The patient roared, jumped up and ran out, the physician back of him with salvarsan and syringe. Had he not succeeded in grabbing the deserter on the front steps and performing the pertrouserian injection, he would have lost his fee.

I have now succeeded in so simplifying the technic that my professional brethren can perform this operation with even ordinary house assistance.

For this injection I simply require two rooms, an operating table, an irrigator, my patented syringe with six nozzles (for sale at all instrument dealers for $29), a sterile bookrest, one sterile assistant and a well-trained office nurse.

The day before the big event, blood pressure and sensory examinations are made on the arm which is to be used, and a compression bandage is applied to it a couple of times so that the patient gets accustomed to the doctor and the doctor gets accustomed to the patient. It goes almost without saying that previous to this, all known tests for renal and hepatic function will have been employed, and ophthalmic, auditory, urine and stool examinations will have been made and the pressure of the cerebrospinal fluid recorded. The night before a sleeping powder is given, or else the patient is given a logarithm table to read or a volume of church stories or something similar. The morning of the event, doctor and patient each take 20 drops of tr. opium; the victim is then given a warm bath, the entire body lathered and closely shaved (our specially modified safety razor is to be recommended, price $7). The doctor cleans his nails, his spectacles, puts on a cap and straps his moustache and beard out of the way, for while this may seem superfluous we know of a hair having been found on one occasion in the salvarsan solution.

The following use is made of the two rooms: They are separated by a door which has a hole in it at the level of the operating table, the hole being sufficiently large to have the arm of the patient stick through it. One thus has the patient so that he can't escape and it is impossible for him to continually annoy one with his stupid, anxious, impertinent, impatient questions. He cannot excite the operator when things don't go right for he does not notice them so quickly. He doesn't make the doctor nervous and the doctor does not make him nervous. For our door brings about a complete separation; in one room lies the patient minus his arm, which for the moment has nothing to do with him, plus the office nurse, whose business it is to give the patient courage and to entertain him with the recital of the wonderful operations of the doctor, and who if at all clever, can extract from him valuable information as to his financial status. In the other room is the arm, covered by sterile dressings—the doctor, his assistant, and the bookrest; the latter is of great use in supporting an antomical atlas, to which reference is frequently of great help. The pages that are of interest are armed with sterile clamps, so that one can turn over the leaves without trouble. The hole in the door has an iris diaphragm, the narrowing of which produces hyperemia of the arm. The narrowing is done slowly and carefully until the patient in the other room yells Au. If on the other hand he yells Autsch the diaphragm is relaxed.

The arm is cleaned with ether, the hand wrapped with a sterile bandage, the irrigator and tube boiled, and the solution freshly prepared, neutralized and warmed up to 37.52° C.

Now comes the most important point, that is, *my instrument*. This consists of six fine injection needles fastened together in a row. Each of these

* This article is a modified translation from the Münch. Mediz. Noch., 1911.

at its upper extremity is so constructed that it can be connected to the irrigator tube. The instrument is stuck as obliquely as possible into the area where it is assumed that the vein is to be found. Sharp watch is now kept to see out of which of the six needles the blood flows; this is the one that is in the vein. It is immediately connected with the irrigator tube, the clamp on the latter released, the iris diaphragm opened and the salvarsan can take its course.

If the patient has any kind of a vein in the arm, one must strike it with my ingenious instrument. If he hasn't a vein there, then, in God's name, he must be stuck in the leg, which has naturally been prepared for this emergency.

I can only say that it is exceedingly pleasant when one can quietly and without disturbance deal with the arm of the patient and the arm alone not bothering with the rest of him which is being attended to by the office nurse, who, at the end of the performance hands the patient a drink of whisky and congratulates him upon his good fortune.

A PRELIMINARY REPORT UPON SOME STUDIES IN SEROLOGY.

By DRS. GILMAN-SCHMITT and OLIVER ALVERES.

The Wassermann reaction, as everybody knows, has proven of value to clinicians in the recognition of cases of lues which hitherto escaped their observant eyes. A number of persons with manifest lues do not show the reaction and many healthy persons show slightly positive ones. Unfortunately for the progress of science, most serologists have been confining their work to performing these tests upon human beings, at 25 per. The authors, however, have done more than this. They have examined the blood of 57 varieties of animals, but for the purpose of this paper, they mention only the work done on dogs. Through the courtesy of the Poundmaster, much otherwise neglected material was put at their disposal. Tests were done of 702 dogs, 606 of which were in the pound and shall be spoken of as clinic cases. All of the latter gave positive reactions; of the others or private cases, only 12 were positive.

The authors believe that the positive reactions point to the presence of a canine form of lues, and its prevalence among the so-called clinic animals speaks in its favor.

It is of paramount interest to determine the relationship between the human and canine diseases. Curiously enough, of the 12 animals in the "private" class, 10 were living in houses where human lues existed. None of the human patients had done anything to prevent the poor brutes from licking their hands and thus infecting themselves.

To return to the practical importance of the work. The authors believe that many of the so-called positive reactions obtained in apparently healthy humans may be due to a reversal of the above mode of infection, namely, the chewing of dog flesh. They are now doing the Wassermann reaction upon a number of persons, using sausage as antigen, and hope to report again in the near future.

REPLY TO DR. VECKI.

Prof. Muffler-Cut-Out has requested that he be allowed to reply to Dr. Vecki's article which appeared in the October CALIFORNIA STATE JOURNAL OF MEDICINE, p. 435. Dr. Vecki states:

"The long-suffering public could hardly be blamed should they feel some kind of a satisfaction when learning that motorcar speeding causes sexual impotence. Several cases I observed made me suspect this fact years ago, but I did not dare to trust my own observation, fearing that my wish may have been the father of my inferences and deductions. But now comes such a careful and absolutely reliable observer as Notthaft (*Zeit. Urol.*, April, 1911), and reports four cases of sexual impotency in wealthy married men fond of automobile speeding, and one in a chauffeur. Notthaft knows of similar cases in the experience of others. The sexual depression developed in from three months to three years after special devotion to the sport. Notthaft ascribes the impotency to a cerebral neurasthenia from the nervous strain of the speeding. The intense concentration of mind required in speeding, the anxiety and the jar of the car—all tend to induce neurasthenia.

"I am convinced that the jar of the car, and the bouncing upon the soft warm upholstery are the chief harmful influences, because the speed-drunk motormaniacs have hardly any mind to concentrate upon anything."

Prof. Muffler-Cut-Out states that for a period of years he has had under observation a number of sterile married women who, since taking up the pleasure of motoring, have become pregnant. He grants that the question of the chauffeur may have some bearing upon the issue. In a second communication the Professor states that he wishes furthermore, to demonstrate a medical chauffeur, who has chauffed for 18 months without an accident. He adds, "I know of but one other similar case, and even this case after a while was, during a visit to the Police Court, seen with symptoms of autointoxication, headache and vomiting, in de can, etc."

NEW AUTOMATIC APPLIANCE.

Dr. P. Kevans, whom we are pleased to have with us after his recent visit to England, writes that during his stay in the college town of Eton, he was much impressed by a new appliance and suggests its introduction in San Francisco. After turning one's back to the automatic appliance and throwing a $5 gold piece in the slot provided for this purpose, a trigger is released, a sudden but slight pain is felt due to the automatic injection needle penetrating the skin, and the intramuscular dose follows. The apparatus he suggests should be used prophylactically and be placed in all great places of amusement, public parks, etc. The Doctor adds, "If Eton does, why can't we."

NEW VACCINES.

In a very brief paper, Drs. Spiro Kete, Phil I. N. Swats and S. P. Bunch announce the preparation of several new prophylactic vaccines. They have found that an emulsion made from the scrapings of wooden toilet seats, duly washed in running water and passed through a chamber filter, if injected locally, will cure hemorrhoids. An emulsion of cochineal, injected in large doses, will cause the rash of scarlet fever to disappear. A vaccine of the hay bacillus cures hay fever and one made from melon seeds will cure melancholia.

Manure thoroughly mixed with salt solution and sterilized at 60° C. they use as their stock vaccine for all infections occurring in country laborers. A bottle of this, they urge, should be in every country home.

From unofficial sources, we are told that the firm of Burroughs & Co. are welcome to act as agents for those products.

SAD ACCIDENT!

Dr. Emily S. Mall wishes to report a very singular case, pleural in origin, where a man who did not go out much suffered from roomertism, and who, though a high liver, showed signs of hepatoptosis.

Dr. Mall is not present to-night, having recently met with an accident. He fractured his coccyx when attempting to sit on a weakly constructed chair placed by a patient's bedside. This is the first instance we know of the doctor's carelessness in examination of stools.

PARETIC SPEECH DISTURBANCES.

In a short communication, Dr. J. Wilsoon Squirt recommends substituting for the words "3rd riding artillery brigade," which is far too simple a test for an educated person, the catch word "Dioxydiamidoarsenobenzol." Whoever cannot pronounce this is to be seized and immediately given a shot of the unspeakable remedy.

MUCUS COLITIS.

In a very original paper, Dr. Anna P. Laxis, conclusively demonstrates that mucus colitis, the etiology of which has been long obscured, is simply a form of hay fever of the rectum, with paroxysms of uncontrollable sneezing from the bowel.

EARS AND LEGS.

Dr. Will T. Cullen in a short communication based upon statistics of 9200 cases, urges upon general practitioners the necessity for more thorough ear examinations in all cases of varicose veins of the legs. We feel that this has been much neglected.

CERVICAL CATARRH.

In an equally interesting and important paper the famous Oriental surgeon, Dr. Sam Honk Honk, recently and repeatedly a guest of our Society, emphasizes the importance of careful examination of the *cervical* spine for lesions of osteo arthritis, X-Rays having shown their prevalence in hundreds of cases of *cervical* catarrh in women.

ADDITION TO THE LIBRARY.

In a very fascinating book recently published by one of our distinguished confreres, and donated by him to our library, we read, under "Physical Diagnosis:"

"Inspection—of feet—of value in recognition of cirrhosis." Does he mean Sorosis?

"Auscultation—listen for friction-crepitus which might indicate a broken heart, or reduplicated sounds indicating one heart that beats as two."

Under case histories, the writer refers to a "young hero, who would have died from cough had it not been for the heroin-e."

Surely it is a misprint which makes us read that "Father Junipero Serra was a sufferer from angina mission dolore."

Under therapy, the following is worth your attention: "If called to a patient who has swallowed $5, do not let him realize that he is $5 out; rather let him think he's $5 in. If it be counterfeit do not leave him pass it. Then make him cough up $10 and begone."

COMMUNICATIONS.

In closing, I wish to read a few notes received to-day:

Sec'y. County Medical Society:—

Dear Sir:—

Will you kindly enquire if any of your members would be so kind as to show me a suppurating wound. In the 3000 laparotomies which I have performed in the last 2 years, I've only seen healing by first intention, so that in a measure, I feel the need of recalling earlier memory pictures before they have entirely vanished.

Dr. Ambly Opia.
G. D. Lyre.

The Milk Commission wishes me to announce to the members present that they now certify not only milk, but butter and cheese. In particular they wish to warn against the use of Limburger and Roquefort cheese unless certified, as they have caught unscrupulous dealers selling these brands of cheese with a bacterial count lower than standard, to wit: 36 trillion to the cu. m.m.

*MEDICAL LESSON PLAY.**

"The Waterdale Doctor."

A PLAY IN TWO PARTS.

By J. Wilson Shiels.

PART ONE.

DOCTOR SMUGG'S VACATION.

PROLOGUE.

Society clipping as telephoned to the editor by Doctor Smugg:

"June 1st, 1911.

"Doctor Always Smugg, Mrs. Always Smugg, their family, and maid leave for Groveville on Tuesday. The Doctor will positively return to the city on the eighteenth of June."

FIRST EPISODE.

Place—Waterdale. Scene—The Sitting Room in Doctor Tom Pine's Home. (Note—Waterdale, a little village just ten miles by road from Groveville. Groveville, a summer resort—quoting from Hotel Circular—"deep in the heart of a redwood forest. Lowest rates, $3.50 per day, European plan.")

Mrs. Tom Pine—gentlewoman—sits at the window. She is sewing. Now and then she looks down the dust-covered road.

Master Tom Pine—youngster. He is playing chu-chu-cars with a full set of dominoes.

Mrs. Tom Pine (starting up)—"Here he comes! Up! up! Jack, and fly to meet him!"

(They rush out-of-doors and stand waving and waiting. *Doctor Tom Pine*—gentleman—drives up. He is dust covered. *Master Tom* jumps into his dad's arms. They all go back to the sitting room. Weary-eyed Bess, the mare, needs no hitching.)

Doctor Tom (flops into the armchair with a sigh of content)—"What time is it? Twelve-thirty! Left seven-thirty, stayed half an hour at Groveville. Gee! Four hours!"

Mrs. Tom (spreading the tablecloth for dinner)—"Who was it, Tom?"

Doctor Tom—"One of the tablemaids, a Miss Hogan. Pretty sick; lobular pneumonia. Tells me she is working to help out an old mother. Guess we'll have to put this case to 'Profit and Loss.'"

Mrs. Tom (with love-lit look)—"Tom, that's getting to be the biggest account we've got."

Doctor Tom—"Can't help it, my dear. Gee! But I'm tired! And all my day's work ahead of me."

Mrs. Tom (bending over him and giving a kiss)—"Never mind; the automobile is getting nearer and nearer and NEARER! Hark! I can almost hear it!"

Doctor Tom (laughing and pulling out a special savings' bank book and figuring for a moment)—"Two hundred and fifty dollars off! My dear, that may be near to your feminine mind—or ear was it?—but to mine it is one hundred and twenty-five visits at two dollars per; and that's a very long way off to me. You know, helpmate o' mine, and if you don't you ought to by this time, that there is a great national sport called 'Bilking the Doctor'; and all players are fans, every mother's son of 'em. No, no, my dear! I don't hear that automobile as clearly as you do."

Mrs. Tom (handing him his mail)—"Here's your mail."

(He takes it. She continues to set the table. The canary starts to sing.)

Doctor Tom (after reading a few moments)—"That's fine!"

Mrs. Tom—"What?"

Doctor Tom—"You remember Middleman and his compound fracture I wired at the mine with Big Bill holding the lamp, and 'Solong' Johnstone giving the chloroform. Well, listen to this. (You know I sent Middleman down to be X-rayed and to get Standwell's opinion?)" (She nods.)

"Avenue Hospital,
"X-Ray Department.

"Dear Doctor Pine:

"Re Mr. Middleman's fracture. Set perfectly, plate shows no deformity. Professor Standwell expressed high commendation and desired me to state that, in his opinion, the continuity of the bone was thoroughly established when the patient left your hands.

"He has nothing to add to the after treatment laid down by you and described to him by Mr. Middleman.

"Yours very truly,
"H. G. Major, M. D."

(Boyishly)—"What think you of your husband now, fair maiden?"

Mrs. Tom—"What I have always thought. If that horrid old asthma would let you work in the city you'd give them all a run for first place."

Doctor Tom—"Run for first place, indeed! Keep that sporting blood under cover, my dear! May I ask if you ever heard of blind love?"

Mrs. Tom—"Well, I don't care, it's the truth! I do wish, Tom, you wouldn't let every one run over you so; you know as well as I do that——"

Doctor Tom—"And I do wish you'd be merciful with your marital lectures. I'm rather sick of being told what a wonder I am, especially when that automobile is getting no nearer. Seriously, I wish we could scrape up that extra two hundred and fifty. With a car I could do work like this morning's without loss of time or energy, the two great assets of the medical man. To say nothing of the effect on the lackadaisical ladies of Groveville Summer Resort. They would sit up in their rocking chairs and 'take notice' of the handsome but bashful Doctor Tom as he sped upon his medical way!"

Mrs. Tom—"Have a care, diffident doctor! Remember what you say about advertisement! (imi-

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* A Play. Consider it tenderly,
Read it with care!
It is built rather slenderly—
Please do not swear!

tating his voice admirably). I abhor the medical man who advertises in any shape or form!"

Doctor Tom (imitating her voice just as admirably)—"Well, I don't care! It's the truth! And you know it!"

(*They both laugh heartily as the curtain falls.*)

SECOND EPISODE.

Scene—Groveville Summer Resort.

All is hubbub. All the guests are busy bees buzzing 'round a money pot. The only boy-child of N. G. Moneebaggs has broken his arm, some say in one place, others in two, and yet others in three. Every one is beside themselves, and no wonder, for is it not a fact that N. G. Moneebaggs is a multi-millionaire?

First Busy Bee Bystander—"Where's Doctor Smugg? Run for Doctor Smugg! Where is he?"

Second Busy Bee Bystander—"He's out fishing."

Third Busy Bee Bystander—"Send to Waterdale for a doctor. Ask the office who's the best one."

Fourth Busy Bee Bystander (*catching sight of Doctor Smugg*)—"Never mind! never mind! Here comes Doctor Smugg. What luck Mr. Moneebaggs. You couldn't have a better. He is so fashionable!"

Doctor Smugg is seen coming toward them on his way to his cottage. He waddles. Over his left shoulder he carries a silver mounted rod with line and fancy fly, over his right an empty fishing basket. He is not a success with fish.

All the busy bees rush after him and bring him, with wild gesticulations, to the scene of the accident. They cry aloud "Make way for Doctor Smugg." With great dignity and much shortness of breath he holds a clinic wherein the radius, the ulnar—spelt with an e-r—the flexor—also spelt with the same—sublimus digitorum, "the proximal end"; "the distal end," all play a most important part. The busy bee bystanders listen in silent admiration. At his command the women bring him God knows what: he has a kind word for all of them as he whittles his splints from the lid of a raisin box. When done they are the wonder of all.

At last the limb is set! The only boy-child of N. H. Moneebaggs continues to cry, but he is not in pain; at least that is what Doctor Smugg declares and he ought to know.

Mrs. Moneebaggs is recovering from a faint in the shadow of the dance hall and many sympathetic women attend her with such soothing terms as:—

"Poor dear!"

"Bear up, darling, the worst is over."

"All is well, Doctor Smugg is with your little one."

"Drink this; it will do you good."

Mr. N. G. Moneebaggs wrings the hand of Doctor Smugg and is profuse in his thanks, which Doctor Smugg accepts most becomingly.

The whole affair is the after dinner talk of Groveville for days and Doctor Smugg is the observed of all observers. Which is just what Doctor Smugg desired all along.

THIRD EPISODE.

Scene: Groveville, June 12th, 1911, six days before Dr. Smugg's departure for the city and five days since the accident, during which time Master Moneebaggs has been very restless and crying a bit, but not in pain according to Doctor Smugg. It may be mentioned that Doctor Tom Pine of Waterdale has, for the same period, attended daily the tablemaid Miss Hogan.

Mr. N. G. Moneebaggs—"And now Doctor Smugg, how much am I indebted? Money is no object."

Doctor Smugg (dramatically and with deep reproach)—"My dear sir! My dear sir! Not another word; I couldn't think of it. This is my holiday, my vacation, no remuneration, however just, is possible. It has been my pleasure to be of aid to your charming and only boy-child and of course to you."

N. G. Moneebaggs—"But Sir I insist I cannot——"

Doctor Smugg—"Not another word, I pray you! My dear sir, not another word. Should you desire it, when the little fellow comes to the city I will look at him again; but nothing NOW I assure you."

He walks away. In a little while he comes across Doctor Tom Pine and weary-eyed Bess on their way home from a visit to Miss Hogan, the tablemaid who, by the way, is doing very well, resting in rapid convalescence. Doctor Tom Pine, remembering Doctor Smugg from his student days—he used to see him rushing around in a fifty horsepower motor car—bows; Doctor Smugg returns the bow on general business principles. A gardener stands hard by. Doctor Smugg turns to him and remarks:

"Who was that who bowed to me just now?"

Gardener—"That was Doctor Tom Pine of Waterdale. God bless him!"

Doctor Smugg—"Thank you."

FOURTH EPISODE.

Scene: Groveville, June 17th, 1911, one day before Doctor Smugg's departure for the city.

N. G. Moneebaggs—"Dear Doctor Smugg, kindly accept this poor token of my esteem and gratitude."

(He hands the Doctor a gold watch; it has a split-second movement and chimes the hours at night; it also has the Doctor's initials—A. S. S.—engraved upon it, to say nothing of the date of the accident to the only boy-child.

"It may remind you of my appreciation when you are taking the pulses of your many patients."

FIFTH EPISODE.

Scene: Cottage of Doctor and Mrs. Alway S. Smugg at Groveville. Time: Bedtime.

Mrs. Alway Smugg (looking at watch)—"Why, Alway! Isn't it a beauty! It must have cost at least two hundred and fifty dollars!!"

Doctor Alway Smugg (arranging the pillows)—"All of that, my dear." (He jumps joyfully into bed.)

Mrs. Alway Smugg—"I think it is the most beautiful watch I have ever seen." (Turns out the light and jumps joyfully after him.)

Mrs. Alway Smugg (after a pause; in the dark)—"I hope you won't let it interfere with your fee."

Dr. Alway Smugg—"I'll see that it doesn't, my dear."

Mrs. Alway Smugg (snuggling up)—"That's right, my darling. Good night."

SIXTH EPISODE.

Scene: The palatial home of N. G. Moneebaggs; the dining room. Time: After the holiday at Groveville.

Occurrence—A consultation between Doctor Alway S. Smugg and Professor Standwell, surgeon. They, after an exhaustive examination, have just left the only boy-child of N. G. Moneebaggs. They are about to exchange opinions.

Doctor Smugg (softly closing the door and most ingratiatingly)—"Well, Doctor, what do you think?"

Professor Standwell—"The arm will have to be reset."

Doctor Smugg (softly and with a smile benignly unctuous and absolutely without shame)—"That was just what I—dear me! One works at such a disadvantage in the country, don't you think, Professor? so dreadfully handicapped. Nothing at hand so to speak. No trained assistance. Will you kindly tell the family and ah—if you will—ah—kindly mention and enlarge upon these facts." (Leading the way to N. G. Moneebaggs)—"This way, Professor."

SEVENTH EPISODE.

Scene: Waterdale. The porch of Dr. Tom Pine's home.

Doctor Tom (just back from Groveville)—"Well, thank goodness, that's over."

Mrs. Tom—"What, dear?"

Doctor Tom—"The Hogan case. She's quite well and back to work."

Mrs. Tom—"And all down to profit and loss!"

Doctor Tom—"Oh, wife, don't be mean."

Mrs. Tom—"All right . . . what's the use . . . you'll never be any different" (looking at him tenderly). "Tired? I'll make you a cup of tea."

Doctor Tom—"You're a brick! Just what I was thinking of all the way home in the buggy."

Mrs. Tom—"Never mind, Tom, dear, we'll get that two hundred and fifty yet" (with a little tremor in her voice when she sees the care lines on his face). "I'm afraid my ears were a bit too keen when I said I almost heard the automobile coming nearer. I'm sorry, Tom, but just you wait! We'll get it yet!"

Doctor Tom—"Well, if we do out goes old Bess to pasture for the rest of her natural life. She's a damned site more tired of the road than I am!"

PART TWO.

EIGHTH EPISODE.

A Society Notice overlooked by the Playfairs.

"July 1st, 1911. Doctor and Mrs. Durable Playfair leave for Groveville on the third of this month."

NINTH EPISODE.

Place: Waterdale. Scene: The sitting room of Doctor Tom Pine's home. Action: As in the first episode.

TENTH EPISODE.

Place: Groveville summer resort, "deep in the heart of a redwood forest," etc. Time: July 6th, 1911. Doctor Playfair is seen swinging in a hammock. He reads lazily.

From the distance comes the sleepy sound of running water; everywhere butterflies and bees hum in sunlit circles; great redwoods throw deep cool shadows, and by their majesty add silence to a day redolent with summer.

Doctor Durable Playfair is a noted diagnostician. Simple in his taste and seemingly distant in manner. This reserve is the good consequence of orderly thought given complex clinical problems. Mrs. Durable Playfair sits beside her husband; she is intent upon a picture puzzle, long since given up by the doctor. Enter Mrs. Richquik.

Mrs. Richquik (all hurry and anxiety)—"This is Doctor Playfair?"

Doctor Playfair (looking up from his book)—"It is."

Mrs. Richquik (with a ready-money-courage tone)—"I desire you to look at my little boy. I am very anxious. He has a dreadful cough and I am afraid he has fever."

Doctor and Mrs. Durable Playfair glance at each other. The aforesaid ready-money courage tone amazes them somewhat.

Doctor Playfair—"I would much rather you called——"

Mrs. Richquik (interrupting rapidly)—"I am all alone. I am so anxious. Please be kind. Oh, what shall I do!"

She starts to cry. There is a pause during which the Doctor and his wife again look at each other. The mother in Mrs. Playfair makes her

sympathetic and she nods a grave acquiescence to his silent question, Shall I?

Doctor Playfair (lifting himself out of the hammock with a sigh)—"Very well, madam, just to calm your fears I'll see the little fellow."

Mrs. Richquik (with much less confidence, much less importance and much more true appreciation and all smiles through tears)—"Oh, thank you, so much, Doctor Playfair."

ELEVENTH EPISODE.

Scene: The log cabin of Mrs. Richquik at Groveville summer resort. Doctor Durable Playfair is seen making his clinical examination. This a very rapid affair, surely not over five minutes, but it shows a vast experience, much intuition, and a technic born of many hundreds of just such cases.

Doctor Playfair (expression serious for the child is quite ill; half aloud, to himself)—"H'm! Capillary Bronchitis."

Mrs. Richquik (explosively)—"What? !! Don't alarm me, Doctor!"

Doctor Playfair—"The little fellow has a bad cold has he not?"

Mrs. Richquik—"Dear me! What shall I do! What shall I do! So far away from home! You will take the case, Doctor? You will attend my only boy-child, won't you, Doctor?"

Doctor Playfair—"No, Mrs. Rickquik, I cannot treat your son and must request you to secure the services of the nearest doctor."

Mrs. Richquik (in despair)—"Oh, please, Doctor. I implore you." (She starts to cry.)

Doctor Playfair—"Of course I do not intend to allow my principles to interfere with the immediate care of your son, nor do I propose to leave you in this anxious condition. So I will do what I can until you can get the local doctor." (She is now weeping full tap. He pauses, looks at her in irritation.) "What is more, I will ask the doctor—whoever he may be—to permit me to consult with him, and if your fears are correct, and he prove stupid and unworthy—which I feel sure he will not, I give you my word I will tell you so and advise you what next to do." (She looks up, hopefully.) "But treat this case I will not" (sternly and with conviction). "I am on my vacation, and even if I were not, I have no right whatsoever to practice in a desultory manner outside my own elected environment."

Mrs. Richquik (resigned to her fate)—"Very well. I suppose I must make the best of it, and, as you say I cannot take him home, I have no choice; but, mind you, I have your promise to protect my dear little Harry."

Doctor Playfair—"Come! come! One would think you and your son were about to be murdered!"

Mrs. Richquik (sobbing)—"I don't care! I don't care! I have no faith in country doctors!"

Doctor Playfair—"Well, have the last word! but I am quite sure you will think differently after this."

(Doctor Playfair walks over to the office of the hotel.)

Doctor Playfair (carelessly; unconcernedly)—"Many doctors in Waterdale?"

Office Clerk—"Two. There's one osteopath, but we don't count him."

Doctor Playfair—"Osteopaths are all very well, in their way. What are their names?"

Office Clerk—"Doctor William and Doctor Tom Pine—father and son. Don't know the name of the other fellow. Doctor William is a bit too old to practice much; he's almost retired—at any rate he never comes here; but Doctor Tom, he often comes to treat the help and I want to tell you you're going a mighty long——"

Doctor Playfair (interrupting him)—'Get Doctor Tom on the phone." (Then to himself)—"Mighty glad I hadn't to make a selection."

TWELFTH EPISODE.

Scene: The parlor of Doctor Tom Pine's home. Doctor Tom at the microscope, in a good light. He is whispering the number of white cells and making the tally with a very blunt pencil. Mrs. Tom is reading. Master Tom is rough-housing a bull terrier. There is something about his expression which forces one to think of the gluteal region of a pair of pants. At this moment Master Tom has both knees on the carnivora's chest and one salivery hand half way down the animal's throat looking for a rubber ball.

The phone gives one long ring and two short ones. Doctor Tom Pine jumps up from his work and takes down the receiver.

Doctor Tom (aside to his son)—"Take that dog out of here. Hello! Yes, this is Rural Four—O—One—yes, Doctor Pine—yes the younger one—what name?—Oh, Doctor Playfair!" (Covering the mouthpiece with his hand)—"Gee! Playfair, the great diagnostician! I wonder what he wants." (Uncovering the mouthpiece)—"Yes, sir—I can come right away—No, I'll take the train—yes, there's one leaving here in about twenty minutes—yes, quite lucky—what did you say the name was—what—spell it—r-i-c-h-q-u-i-k—Richquik. No, I have no automobile—the train will be much quicker than the buggy. Capillary Bronchitis—all right—yes—I'll ask for you at the office." (He hangs up the receiver with a bang, grabs his wife and nearly lifts her off her feet with a hug.) "I've got a great case and I am going to meet a great doctor. What think you of your husband, now, my dear?"

Mrs. Tom—"I think you are worth a hundred Playfairs!"

Doctor Tom (very seriously)—"My dear, you don't know Playfair."

THIRTEENTH EPISODE.

Scene: Office of Groveville Hotel. Enter Doctor Tom Pine.

Hotel Clerk—"How'de, Doctor Tom?"

Doctor Tom—"How'de, Bill? And the wife?"

Hotel Clerk—"Fine as silk, thanks to you. Doctor Playfair is expecting you. I'll send your

card over. Front! Take this card over to Cottage 22. Get a move on. Yes, siree; never better!"

Doctor Tom—"I'm glad of that, Bill."

(Doctor Playfair enters unseen. The boy has missed him. He stands listening.)

Hotel Clerk.—"Shall I get another bottle of tonic? It's sure the proper dope!"

Doctor Tom—"Did you not say she was as fine as silk?"

Hotel Clerk—"You bet yer!"

Doctor Tom—"Then why, in Heaven's name, another bottle of tonic?" (Doctor Playfair laughs. This pleases him.)

Doctor Playfair (coming forward)—Doctor Pine? I am Doctor Playfair. The doctor is quite right, Mr. William, if your wife be 'as fine as silk,' why, in Heaven's name another bottle of tonic?"

Hotel Clerk (laughing)—"That's one on me! I'll buy." (All three laugh and at once are friendly.)

Doctor Playfair—"Shall we go to the library, we can talk quietly there?" He leads the way to a room, furniture of which consists of a few weeklies, some impossible yellow-back novels, a raft of time-tables and hotel circulars (already quoted from) and three or four writing desks.

Doctor Playfair (coming quickly to the point)—Mrs. Richquik requested me to phone you. She desires you to attend her little son. Her anxiety made it necessary for me to see the little fellow, therefore I trust that you will pardon me."

Doctor Tom (surprised)—"Why, doctor, I'm only too pleased to——"

Doctor Playfair (interrupting him)—"The boy is quite sick; as I told you over the phone—lobular pneumonia—quite a sharp attack; any amount of infection. Now, doctor, more by my misfortune than by my fault Mrs. Richquik has heard of me, and she insists that I consult with you. I trust that this will meet your approval. You must make allowances for worried mothers, you know."

Doctor Tom—"I shall be delighted. I know your method and line of treatment will be instructive."

Doctor Playfair—"But, my dear doctor, I do not intend to make another examination. This is your case. Shall we go over?" (They walk over.)

Doctor Playfair (on the rather steep steps of the Richquik cottage)—"You suffer from asthma; not cardiac, I trust?"

Doctor Tom—"No, thank God! Just the typical neurosis. Waterdale agrees excellently well. I am seldom worse than you see me. In the city I am impossible." (They enter the cottage.)

Doctor Playfair—"Mrs. Richquik, this is Doctor Pine of Waterdale."

Mrs. Rickquik (most effusively)—"Deeelighted to see you, Doctor Pine."

(Doctor Playfair gasps in admiration. Her country doctor remarks still ring clear in his memory.)

Doctor Playfair—"Will you kindly make your examination, doctor."

(They all pass into the sick room. Doctor Pine makes a very slow, classic examination of the thorax, as a whole, lasting at least fifteen minutes. The silence is only broken by the fret of the child. Doctor Playfair, determined to be true to his promise to Mrs. Richquik, watches him keenly. He is pleased to notice Doctor Pine hesitate over the patches of dulness he himself found, and delighted, beyond words, with his method and confidence. As a matter of fact the whole examination is a huge delight to him, for the keen inspection, the gentle, up-to-date percussion, the exact comparison of sides, the care in the contrasting of cardiac second sounds, the time spent upon the right heart border, and above all the fine sense of courage to cure and power to sympathize so necessary to the definition of a "clinician" of consequence, make Doctor Playfair very fond of Doctor Pine and proves his contention regarding "country doctors." Doctor Tom has finished his examination and has gone into the next room to wash his hands.)

Mrs. Richquik (much impressed and in a whisper)—"Why, he is as thorough as you are!"

Doctor Playfair (in the same whisper)—"More so, my dear madam; more so." (Doctor Tom returns.) "Well, doctor, what do you think?"

Doctor Tom—"I agree with you, sir, but the little fellow seems possessed of resistance and reserve; so he ought to mend rapidly."

Mrs. Richquik—"You make me very happy indeed; very happy!"

Doctor Tom—"Yes, madam, there is an old saying, 'Never despair of a sick child.' One day they seem posting the road to death, and the next they come galloping back again. They rather enjoy their ride, for every one welcomes them back with tears in their eyes. Yes, children are great tricksters when it comes to a consideration of health and disease."

Doctor Playfair (very much surprised and interested)—"Very well put, Doctor Pine! Very well put indeed."

Mrs. Richquik—"I am so glad you take such a hopeful view. Will you get what is required, and leave your orders?"

Doctor Pine—"Yes, I will send any additional medicine with Mistress Martha, and see your son to-morrow morning. Mistress Martha is our Waterdale nurse. Quite untrained in the city sense, but very much trained, I assure you, in the nurse sense." (Doctor Playfair and Mrs. Richquik look at each other; they both start laughing, and Doctor Tom Pine looks at them somewhat annoyed, for he thinks that they laugh rather too heartily for the humorous value of his remark. Doctor Playfair and Doctor Tom walk toward the office.)

Doctor Tom—"When will you see the case again?"

Doctor Playfair—"Never, if I can help it. Too much Richquik makes a fellow very sick." (They both laugh.)

Doctor Tom (after a long pause and very seri-

ously)—"Doctor Playfair, all this is very kind of you and I value it most highly, and I thank you most sincerely."

Doctor Playfair—"Not at all. With a man of your ability the sharing-burden consultation should be conspicuous by its absence."

FOURTEENTH EPISODE.

Scene—The Palatial Home of Mrs. Richquik. A bridge party is in full swing. At one table sits Mrs. Slaminson, Mrs. Aceasy, Mrs. Chicane and Mrs. Richquik. At the fireside sits Miss Lemona Quince, at one time a severe and able-bodied school marm but now giving culture to the Richquik home.

Mrs. Chicane (shuffling)—"I quite agree . . . she's positively horrid. . . . Quite impossible."

Mrs. Slaminson (taking a sip of her whisky and water)—"Why, 'Chickie'! We could have our little fingers together all day long! And so fat! Fancy her in a hobble!"

Mrs. Aceasy (looking at Mrs. Slaminson, who weighs at least 189 pounds)—"I do hope they won't be fashionable, don't you, dear Mrs. Slaminson? Nowadays one has always to be so conspicuous not to be noticed." (Turning to Mrs. Richquik lovingly.) "Do you discard from strength or weakness, dearie?"

Mrs. Richquik (giggling)—"I'm always true to my sex; from weakness, love."

Mrs. Slaminson—"You're too hard on us, my dear. Our strength lies in our weakness."

Mrs. Richquik (quite sincerely)—"How clever you are!"

Mrs. Aceasy (cattishly)—"Is that original? You are so bright!"

Mrs. Slaminson (freezing Mrs. Aceasy with a look)—"How did you enjoy Groveville, Mrs. Richquik?"

Mrs. Richquik—"Oh, very much. My little son Harry was taken down with a very severe pneumonia, but I never missed a bridge party; I had such peace of mind. I had an excellent nurse, a queer little old woman from Waterdale, who watched him night and day."

Mrs. Aceasy—"Just like a mother?"

Mrs. Richquik (remark going over her head)—"Yes, my dear, and I had such confidence in Doctor Pine."

Mrs. Slaminson—"Never heard of him."

Mrs. Richquik—"Nor had I, but Doctor Playfair recommended him highly. He is from Waterdale, and Doctor Playfair thinks that he has a most brilliant future."

Mrs. Aceasy—"What does he look like?"

Mrs. Richquik—"Oh, very handsome. . . . Serious-all-work-and-no-play sort of a person. And oh! such wonderful bedroom manner!"

Miss Lemona Quince (hurriedly and severely looking up from her work and over her glasses)—"Sick-room, my dear. Sick-room!"

Mrs. Richquik (giggling)—"How stupid of me! Sick-room, of course."

Mrs. Slaminson (helping out)—"I am glad to hear this. We had a terrible time last year at a place called Darnville. Our little George caught the measles from some horrid little children who were living in the same hotel, and no one would come near us, and no doctor within miles. Next year I shall go to Waterdale or Groveville."

One or two others—"So shall I." "So shall I."

Mrs. Aceasy—"So shall I. We all have such a sense of security when we have a good physician close by."

Mrs. Richquik—"I am glad to hear you all speak this way. I can never be too grateful to Doctor Pine. I have already sent him quite a few good patients."

FIFTEENTH AND LAST EPISODE.

Extract from "The Weekly Waterdale Wasp":

"September 25th, 1910—After a pleasant ride from the city, Doctor and Mrs. Tom Pine arrived home to-day in their new automobile. Every one was much interested in the machine, which is a 1911 thirty-horsepower 'Clutch.' This is the first car to be bought by an inhabitant of Waterdale, and goes to show what rapid progress the city and its surrounding country is making. We congratulate the doctor upon his useful possession and realize that no car will be put to better service."

FINIS.

(This space was reserved for the speech of the distinguished guest of the evening, but the Editor refuses to print it.)

Dr. René Bine, Secretary of the San Francisco County Medical Society, has been appointed the head pall-bearer at the funeral of the Editor of the State Journal, which auspicious event will occur two days after the issue of this number of the Journal.

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All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. X MARCH, 1912. No. 3

EDITORIAL NOTES.

DO MEN THINK?

Do such prominent men as William J. Mayo, George W. Crile, A. J. Ochsner, J. H. Carstens, E. Fletcher Ingalls and others who contributed articles to the January number of the *American Journal of Surgery*, give the slightest thought to what they are doing by so contributing? It would seem to be impossible that men of that character, men who have worked as hard as a number of these gentlemen have worked for the upbuilding of the American Medical Association can really understand what it means when they give their support to a publication that represents the very extreme of "published-for-profit" medical (?) journalism. The advertising pages of the publication in question are full of the very worst fake and fraudulent nostrum advertisements that ever were. And yet men of distinction in the medical world will help that nefarious business along by contributing articles to such a sheet! The *Journal A. M. A.*, in December last, called attention to the nostrums advertised in the publication under discussion and deplored the fact that reputable men would contribute articles to such a publication or subscribe to it. And that is the gist of the whole matter. These frauds have been exposed by the Council on Pharmacy and Chemistry; they have been a danger and an injury to the medical profession of this country for years, because the truth about them was not before known; and yet men who support and believe in the Council on Pharmacy and Chemistry, men who are strong in the Association, will not see to what extent they defeat the result of their own work in the Association by helping to support a publication that will advertise these frauds. Would Will Mayo, for instance, so much as touch the dirty money that is paid for the advertising of antikamnia, phenalgin or any one of a dozen things that are advertised in the very journal containing his contribution? And if he would not, why should he help along that sort of business by contributing his article? Does he not know the antikamnia lies? Does he not realize the postum lies and the old grape nuts appendicitis advertisements—and the Collier verdict? And how about Ochsner? Does he think grape nuts, by the postum company a good thing to prevent appendicitis? Does he use "h-m-c" or prescribe our old friend "cactina pellets"? If he does *not* believe in these things, if he *does* believe in the honest work of the Council on Pharmacy and Chemistry, if he honestly and earnestly supports the American Medical Association, how, in Heaven's name, can he justify himself for aiding in the exploitation of these frauds? The proposition is a simple one. If decent men would keep their names out of bad company; if they would refuse to contribute or subscribe to any publication which advertises these rank nostrums, then both such publications and such nostrums would die.

ANOTHER EXAMPLE.

We do not have to go so far afield to find examples of prominent men contributing articles to journals that publish nostrum advertisements. In the *Annals of Surgery* for February we find the following choice advertisements: glycothymoline, "h-m-c," glycoheroin (smith), ergoapiol, chinosol, bovinine, sal hepatica, whirling spray and Gray's glycerine tonic; we sadly miss our old friend antikamnia, the advertisement of which used to appear in the *Annals of Surgery*. In the same issue of the same publication we find a paper by Douglass W. Montgomery, M. D., and George D. Culver, M. D., San Francisco. Dr. Montgomery has been a member of the State Society for many years; he has been a member of the A. M. A. for many years; during all of that time he has supported the work of the Society and of the Association and has expressed views in hearty support of the Council on Pharmacy and Chemistry. Why does he contribute to a journal that will advertise nostrums which Dr. Montgomery knows to be unworthy of professional consideration? *American Medicine* for January contains the advertisements, among others, of glycerine tonic, cactina pellets, seng, campho-phenique, chionia, viburnum compound, bovinine, neurosine, dioviburnia, ergoapiol, resor-bisnol, tri-iodides, maizo-lithium, antiphlogistine, pepto-mangan, dioradin, glycothymoline, postum, Pond's extract, glyco-heroin, vapocresolene, a-f-sal, anasarcin, phenalgin, "h-m-c," sal hepatica, oppenheimer treatment, celerina, sanmetto, varicocene, iodia and apioline. In the same issue is a contribution by Douglass W. Montgomery, M. D., San Francisco. Why should he do it? There are a whole lot of people who would not care to see their names in the same binding with that list of nostrums, etc. *And he knows what they are!*

SOUND VIEWS.

In the discussion of this question—why do prominent men write for journals that publish worse than improper advertisements?—a distinguished surgeon raised the following interesting point: What good do these authors think will come to them from publishing their articles in such a medium? The subject of advertising, and particularly nostrum advertising in medical (?) journals, is a popular one at the present time and criticism is heard on all sides though this criticism may not reach the writers at first hand. The man who contributes to such publications is certainly criticised most unfavorably by a large number of the very people whose good opinion he would most like to keep. Take the same men who have already been mentioned in that connection in this issue; they have been criticised in no unmeasured terms by many of their associates whose good opinion they value; but doubtless such words of criticism would never have been said to them directly—except in this JOURNAL. The strait-laced man, the man who will not see his name on the pages of such a publication and who will not subscribe to any such, may be laughed at by some, but he gets the respect of all and his attitude is absolutely above cavil. What good can it do a man like Binnie, able surgeon and most scholarly thinker, to publish a good article in a journal that carries the sort of advertising one finds in the same issue of the *American Journal of Surgery* in which his paper appears?

THE PRESS AND PATENT MEDICINE.

We howl a lot about the outrageousness of the newspapers in printing advertisements of quacks, cancer cures and patent medicines of all sorts, but are we very much better than they? Look at our medical journals and the fraudulent nostrums they advertise! Look through the advertising pages of the *New York Medical Journal*, the *Medical Record*, the *Annals of Surgery*, for example, and see what you think is the difference between our own publications and the daily press! There is mighty little, when you come to study it. And it is just because decent men are willing to contribute articles to or subscribe to these journals, that they live and insult an honest man's intelligence in their advertising pages. What good reason can we have for asking the newspapers to drop their fraudulent patent medicine advertisements when our own medical journals publish advertisements of just as great and just as palpable frauds that have been shown up over and over again? If the members of our profession did not keep these journals alive, either they or the nostrums or both would die. What is the ethical difference between an antikamnia "ad" in a medical journal and a peruna "ad" in a daily paper? Yet you object to the latter but tolerate the former! We talk a lot about the apathy or the ignorance of the public in opposing public health legislation, but it is not in it with the apathy or the ignorance of the medical profession in opposing the honest work of the Council by supporting publications that keep on advertising exposed frauds and rank nostrums! Man is certainly the most inconsistent of all animals!

QUALITY OF PAPERS.

At various times, during the past ten years, there has been some discussion as to the quality of the scientific papers published in the STATE JOURNAL. The comment of the editor has always been that the papers published in the JOURNAL reflect the productivity of the physicians in the state and their attitude toward their fellows in the state and toward the STATE JOURNAL. If all the best papers written by members of the Society are sent to other and larger or more widely circulated journals, then the average paper in the STATE JOURNAL will not be of very high class. That, it would seem, is obvious. Also, it would also seem to be equally obvious that such writers have no reason or excuse for any criticism of the quality of the papers that do appear in the JOURNAL. All this is apropos of two things that have recently been forcibly brought to our attention. Very few papers read before the county societies in the southern part of the state are sent to the JOURNAL; and some very good papers are occasionally read before those societies. Furthermore, please read the proceedings of the San Francisco County Society, in this issue, and note the distribution of the papers presented before that one society. The desire of every publication committee that has existed is to print the best possible papers and to represent the whole state; to have the JOURNAL truly representative of the whole Society and not a small portion of it. But no publication committee can do more than make use of the material that the members provide. It all comes back to the original contention—the STATE JOURNAL is just what the members of the Society make it. If they write and contribute good papers, then the scientific tone of the JOURNAL is good; if they do not do this, then it is lower than it should be. Let us always have criticism, for it is good for any one; but let us also be sure that we understand what we are criticising and why. It is up to the members of the Society.

PUBLICITY CAMPAIGN.

Probably only a few even of those who are deeply interested in the American Medical Association, have any very clear idea of the enormous amount of work directly affecting the medical profession and the public, that the Association is doing. This particular word of comment relates to only one of the various large and important activities of the Association—its press bureau for the education of the public on public health matters. When the attempt was made to secure general public health legislation by the Congress, it was at once evident that the public at large was and is densely ignorant of all things pertaining to or related to medical science, public health, hygiene, sanitation, etc. Ignorance generally means opposition; when you see people opposing

their own best interests you may be absolutely sure that they are ignorant of what their interests really are, for only a very small proportion knowingly do not care. In order to overcome this opposition of ignorance and thus to carry further the inestimably valuable work of recent medical science—preventive medicine—the co-operation and not the opposition of the public must be secured. To this end the Association, through its Council on Health and Public Instruction, has established a press bureau and is now sending paragraphs devoted to facts of public health interest to over 5,000 newspapers every week. Elsewhere in this issue we publish a letter that was sent out to the editors of these various papers, giving them in very plain English a statement of the attitude of the Association and the real reasons for its activities in this direction. Quite a number of newspapers published this letter and a surprisingly large (and ever growing) number of them are using the matter sent to them by the Association. This is all based upon the sound sociological fact that, in the long run, a majority of the public at large must settle any question and must settle it right. No matter how long abuses may continue or how wrong any action taken to-day may be, *in the long run* the question will be rightly decided. The sooner the general public know the facts the sooner will they see to it that any important issue directly affecting them is settled right. One of the best things that a former President of the United States ever said was that publicity is the best weapon to fight fraud and secure justice and honesty; for publicity means education and education means co-operation for that which is right.

VALUE OF LITTLE THINGS.

There are times when little things seem to take on a very great importance. The annual dues to a county medical society are so small—even in those societies where they are the highest—that they may be regarded as truly among the "little things"; and yet the prompt payment or the careless neglect to pay, or the feeling that it is an unnecessary expense, may lead to something of the greatest importance to the individual involved. Some instances of this have recently come to our attention. In a certain county of the state there now resides a physician who formerly lived in another county and was for some years a member of that county medical society. When he moved he failed to be transferred to the society of the county of his new home; for one reason or another he also failed to join this county society so that for some three or four years he has not been a member of the State Society. A "little thing," if you please to consider it so; but consider also the result of this "little thing." That physician is now being sued for alleged malpractice and it will cost him a good deal of money to defend the suit, even if he wins it; it has already cost him several hundreds of dollars. Had he kept up his membership in a county unit—a "little thing"—he would be at no expense whatever in the defense of this suit. In another county two physicians are jointly parties to a similar suit. One of them is a member of his county society and his interests will be looked after, without expense to himself, while his associate will be obliged to spend a not inconsiderable sum to protect himself. A "little thing," grown to some size. In another case a member of a county society forgot to pay his dues; or did not care to do so; or at any rate, did not and so was not in good standing. And just during that time came the case that has resulted in a suit which he will have to defend himself, for the State Society defends only those suits that are brought against members in good standing. It is a little thing to keep yourself in good standing—a very few dollars a year—but if you neglect this "little thing" have you any idea when it may become, for you, a pretty big thing?

MEDICAL EDUCATION.

Through the efforts of the A. M. A., the courses of medical study have been carefully revised and the standards of medical education have thereby been raised to a degree of which we may well be proud. However, with the raising of these standards as well as the standards of preliminary education, very little or nothing has been done in the revision or preparation of standard text-books for the man engaged in the study of medicine during his college career. The student is obliged to plod through voluminous books—often the texts of the professors in charge of their respective departments. Such books are usually reference books and may set forth personal opinions or may be compilations from a large number of authorities on the branch of medicine indicated in the title of the book.

What is the result upon the student? It means a large amount of reading to obtain a few facts or underlying principles in which the student should be thoroughly trained. Such sifting, necessitated by this voluminous reading, had better be done later, perhaps when the student is pursuing his practical clinical work during the last two years of his medical student-life. These texts also drive the student to the use of the quizz-compend or epitome, which usually are too brief and often erroneous. What is the solution of the problem? Texts should be prepared by teachers of medicine for the medical student. These books should contain the fundamentals or underlying principles of the different subjects in clear, concise language and be based on leading and accepted authority. The material of each book should be logically systematized. As a result we would have books that

would not be too voluminous and the subject matter of which should be thoroughly mastered by the student.

The A. M. A. has gone into the publishing business to such an extent that the writer of these lines suggests that this association establish a committee on students' text-books. This committee, composed of competent teachers of medicine, or with the assistance of such, might rewrite older texts or originate books for the student and the A. M. A. by publishing the same would enlarge its sphere of usefulness. Such books can be revised at stated or necessary intervals as the progress of medical science may demand. Books of this kind would also be of inestimable value to the busy practitioner, who with them can review and revise his knowledge of the basic subjects, viz: physiology, histology, chemistry, bacteriology, etc., as he is now doing with the practical series of medical year books.

The above ideas are the result of close personal observation during an association with recent graduates and old practitioners in post-graduate work, which showed to the writer the necessity of books as above outlined. This association proved to what small degree the busy practitioner was able to keep up with the trend of the times—not in general knowledge or skill, but with basic principles of the fundamental subjects underlying the more advanced ideas of medical knowledge.

O. G. W.

FUNCTIONAL DIAGNOSIS—A FERTILE FIELD.

Since Virchow's time the study of pathological anatomy has overshadowed that of pathological physiology and only of late has the pendulum shown signs of its backward swing. The detection of a deranged function is often of more importance —for the welfare of the patient at least—than is the demonstration of a given anatomical lesion. That there has been a realization of this is evidenced by the efforts of investigators, both laboratory and clinical, in devising ways of functional diagnosis, especially for the excretory and digestive systems. As regards this work two facts stand out pre-eminently: the multiplicity of methods, and the ignorance of the average man regarding any of them, both of which would seem to point to the conclusion that no very satisfactory means have been discovered. To be satisfactory a method must be available "clinically," perhaps not to the general practitioner in the home, but to the clinician with ordinary hospital equipment. Elaborate metabolic study, probably the best way of understanding the individual case, is, and will be, out of the question for universal use, and medicine has been forced to look to "short-cuts" in determining the functional capacity of an organ. For the kidney, cryoscopy and the study of changes in the elimination of various regents and dye-stuffs have received the most attention. Cryoscopy and other procedures of physical chemistry, to be of value, must be done by a trained observer, a fact overlooked in many reports. The estimation of the elimination of substances such as iodides, salicylates, indigocarmine, methylene-blue and the most recent phenolsulphonephthalein, is of much simpler character. With the last named drug particularly, thanks to the work of Rowntree and Geraghty, Thomas, and Cabot and Young, we seem to have a technic with few demands regarding apparatus and skill of manipulation, which at the same time gives great promise as to reliability, although it is as yet barely out of the experimental stage.

Even less has been accomplished for the organs of the digestive tract. The functional study of the pancreas is confined to rather unsatisfactory tests for the presence of its ferments in the intestine and to the demonstration of a possible disturbance in carbo-hydrate metabolism by an alimentary glycosuria. It might be remarked parenthetically that this latter manoeuvre should be attempted much more often than it is. In the light of our newer knowledge of the importance of the liver, particularly in relation to acidosis, comes a greater necessity than ever for determining the degree of its integrity. Strauss in 1901 gave us a simple procedure for showing the lessened tolerance for levulose in hepatic diseases yet few have tested out the worth of his method; Goodman in 1909 and Churchman in 1912 having given us the only papers of note in this country. Both these workers report encouraging results.

These are but a few of the possibilities in the line of functional diagnosis. Many opportunities await the investigator in this field of research and results of great value may reward his labors. The cognizance of disordered structure is no whit more important than of disturbed function, and modern medicine demands that the exact methods of determining the one shall be used for the other.

L. H. B.

REMEMBER!

Protection by the State Medical Society

PROTECTS!

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NOTICE

PRELIMINARY PROGRAM

Forty-second annual meeting of the Medical Society of the State of California.
Del Monte Hotel, Del Monte, April 16th, 17th and 18th, 1912.
Railroad rates the same as usual; one and one-third fare for the round trip.

The provisional program, subject to revision and correction, is as follows:

The Committee on Scientific Work of the State Society has so far arranged for the following program:

There will be one symposium on "Poliomyelitis" in which so far the following men will participate:

Prof. Hans Zinsser of Stanford University will speak on the experimental side of the problem; Dr. R. L. Wilbur of Palo Alto on the Clinical side of early cases; Dr. T. J. Orbison of Los Angeles on the Neurological side; and Dr. J. T. Watkins of San Francisco on the Orthopedic side.

There will also be a symposium on Salvarsan and the Wassermann reaction. This will be a joint meeting with the Pacific Coast Branch of the American Urological Association. The following gentlemen will take part in the discussion: Dr. Walter Brem of Los Angeles, Dr. Wm. F. Cheney of San Francisco, Dr. Chas. D. Lockwood of Pasadena, Dr. Geo. Newmark of San Francisco, Dr. H. B. Oliver of San Francisco, Dr. Leon J. Roth of Los Angeles, Dr. W. F. Schaller of San Francisco, Dr. V. G. Vecki of San Francisco, Dr. D. W. Montgomery, Dr. Howard Morrow and Dr. L. L. Schmitt, of San Francisco.

Major Roger Brooke of the U. S. Army Medical Corps has kindly consented to read a paper on "Typhoid Vaccination." Dr. Dudley Fulton of Los Angeles, who is in charge of the Medical part of the program annouces the following papers:

Dr. Arthur H. Reinstein will read a paper entitled "An Analysis of the Examination of 1800 Women of the Prostitute Class of the City and County of San Francisco, with Special Reference to the Prevalence of Venereal Disease." There will also be a paper by Dr. E. D. Chipman on "Some Observations in the Diagnosis and Treatment of Syphilis," and Dr. Ralph Williams, of Los Angeles, will contribute a paper on "Tuberculides as Observed in Southern California."

Dr. C. M. Cooper and Geo. L. Painter, "The Role of the X-Ray in the Diagnosis of Diseases of the Stomach (illustrated by lantern slides);" Dr. Robt. L. Cunningham of Los Angeles, "The Mechanism and Clinical Aspect of Chronic Arterial Hypertension."

Dr. Andrew S. Lobingier of Los Angeles, who is looking after the Surgical side of the program announces so far: Dr. E. T. Dillon of Los Angeles, "Report of a Case of Cerebral Cyst;" Dr. Guy Cochran of Los Angeles, "Operative Treatment of Fractures;" Dr. Rae Smith of Los Angeles, "Hepatic Abscess with Report of Cases." He hopes to have several important communications from San Francisco surgeons.

Dr. D. Friedlander of San Francisco will read a paper on "The Diagnosis of Tuberculosis of the Skin;" Dr. LeRoy H. Briggs of Oakland, "Clinical Value of the Arneth Method of Blood Examination;" Dr. Annie W. Williams of Hayward, "Dietetics from the Modern Standpoint."

Following is the provisional program for the Eye, Ear, Nose and Throat Section:

Dr. Chas. Miner Cooper, San Francisco, "Diagnosis of Hypophyceal Affections;" Dr. Ernest C. Dickson, San Francisco, "The Pathology of Hypophyceal Affections;" Dr. H. B. Graham, San Francisco, "The Operative Procedures in Hypophyceal Affections;" Dr. Boardman, San Francisco, "The Radiography of the Hypophyceal Region;" Dr. Henry Horn, San Francisco, "The Nose in Its Relation to Bodily Reflexes;" Dr. Leo. Eloesser, San Francisco, "Plastic Surgery of the Nose;" Dr. Edward C. Sewall, San Francisco, "The Relationship Between Angio-Neurotic Edema and the Accessory Sinuses of the Nose;" Dr. W. F. Blake, San Francisco, "Pulsating Exophthalmos;" Dr. Vard H. Hulen, San Francisco, "General Anesthesia in Cataract Work;" Dr. E. W. Alexander, San Francisco, "Pathological Conditions of the Eye Secondary to Diseases of the Lymphatics of the Neck and Throat;" Drs. Suggett, Day, Dunn, San Francisco, "Orthodontia in Its Relation to Nose and Throat Work."

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HOTEL DEL MONTE

APRIL 16th, 17th AND 18th

ORIGINAL ARTICLES

RECENT ADVANCES IN REGIONAL (LOCAL) ANESTHESIA.*

By L. ELOESSER, M. D., San Francisco.

If ever there was an instance of the development of a fertile and far-reaching field from the seed of an apparently unimportant technical detail it is that of the development of regional anesthesia from Braun's discovery of the combination of adrenalin with cocain and other local anesthetics in 1902. Before this the application of local anesthesia was exceedingly limited, and how inadequate it was all of us who have seen the old "infiltration-anesthesias" of Schleich can bear witness. The great absorbability of pure solutions of cocain, eucain, novocain and other similar drugs was the stumbling-block that impeded their use for more than the anesthetization of certain very limited fields.

The anesthetic effect of these drugs is due to their property of temporarily inhibiting the conduction along the course of a nerve of those stimuli that we feel as pain, or of temporarily paralyzing the receptors of these stimuli, the terminal filaments. In order to accomplish this it is necessary that a sufficiently strong solution of the drug remain in contact with the nerve or the filament to be paralyzed for a sufficiently long time. It is impossible to block a nerve by injecting a pure solution of cocain into the surrounding tissues unless we inject it in a concentration strong enough to be dangerously toxic, and this simply because the drug is carried away into the general circulation before it has time to penetrate the nerve-trunk around which it is injected. It diffuses into the loose cellular tissues around the nerves with a much greater rapidity than it pervades the relatively firm structure of the nerve itself, and it is for this reason that the absorbability of the anesthetic solutions proved such an impediment to their extensive application. So that before this discovery of Braun's, before the discovery of the addition of a vaso-constringent to the anesthetizing solution, the successful application of local anesthesia was limited firstly, to those tissues whose mechanical texture made the solution difficult of absorption—such as the tough layer of the corium, anesthetizable by the intradermatic method of Schleich; and secondly, to those regions that admit of the application of mechanical devices to hold the solution in place—such as the digits and the penis, which Oberst anesthetized with the aid of a constricting rubber band. These were the very limited fields of successful and dangerless local anesthesia before the date of Braun's discovery; attempts at a true nerve-blocking, at a regional or conduction-anesthesia by injections through the skin had not led to practicable results.

The older workers with local anesthesia were fully cognizant of the fact that it was the absorbability of their solutions that stood in the way of their wider application; as far back as 1885 Corning of New York described methods of local anesthesia with cocain, in which he prevented the absorption of the drug by means of Esmarch bandages, compression forceps, rubber-covered rings of wire and similar devices. Crile sought to limit the quantity of cocain by laying the nerve bare under general or infiltration-anesthesia and then making an injection into the nerve-sheath itself.

But this difficulty, the difficulty of getting the solutions to stay where they were wanted, was not the only one with which the earlier workers in this field had to contend; the absorbability of their solutions was made still more pernicious by the high toxicity of the drugs they had at their disposal. I need not allude to the deaths that have occurred from the absorption of very small doses of cocain in patients showing a peculiar susceptibility to this drug, nor finally call attention to a further deficiency—to the fact that it decomposes at 98° C. so that it cannot be sterilized by boiling.

The discovery of novocain by Einhorn was a great step forward; this drug has completely supplanted cocain in regional anesthesia; its anesthetic power is high, a 0.1% solution sufficing to produce anesthesia at the site of injection, it is absolutely non-irritating even in a 10% solution, its solutions may be sterilized by boiling for a short time without decomposing the drug, and most important of all—its toxicity is very low. Liebl injected ¾ gramme into himself without any ill effects, more than 2 grammes have repeatedly been injected without harm to the patient, a death from novocain as far as I know has not been recorded. I have never even seen a serious collapse from its use. It is the hydrochloric acid salt of the novacain base that is usually employed; Gros, however, found that we may double or treble the anesthetic power of the drug by using a bicarbonate salt. He has given several formulas, the following is the formula for the 1% solution:

Sodii Bicarb. puriss. pro analysi (Merck) 0.25
Sodii chloridi 0.50
Novocaini hyrochloridi 1.00

This powder if kept dry does not deteriorate; when ready for use it is dissolved in 100 cc. of cold sterile distilled water, sterilized by boiling up rapidly and cooled quickly under a jet of water; 10 drops 0.1% adrenalin are then added. When the solution is boiled a certain amount of CO_2 is given off, some of the bicarbonate being reduced to the alkaline carbonate, and the anesthetic power of the mixture is increased. This salt of novocain is therefore rendered more active by sterilization, it has a greater anesthetic power than the hydrochloric acid salt, anesthesia follows its injection more rapidly and is more abiding than with the hydrochloride. Its use is of especial advantage in the blocking of thick nerve-trunks, such as the sciatic, which are enclosed in a resistant sheath and are very hard to anesthetize by the ordinary perineural injections.

By these two discoveries: Braun's of the addition of adrenalin to the anesthetizing solution, and Einhorn's, of novocain, have the absorbability and the toxicity of the anesthetizing solutions been overcome, the stumbling blocks to local anesthesia removed and the recent development of regional an-

* Read before the Section on Surgery of the San Francisco County Medical Society, December 19th, 1911.

esthesia made possible. With a relatively non-toxic sterilizable drug in our hands, and with the help of adrenalin we can effectively block the sensation of pain along the thickest nerve-trunks and the application of regional anesthesia has been extended until its limits have been set only by the anatomical conditions met with in the various regions of the body.

In general we may state that all those parts of the body are amenable to regional anesthesia which are subserved by one nerve or by a simple combination of nerves, the anatomical position of whose course admits of their being reached by the anesthetizing needle without damage to important adjacent structures.

Regional anesthesia has come to be merely a matter of the anatomy of the peripheral nerves—given a part of the body of simple innervation, find the point at which its nerves can be most effectively blocked. It is along these lines that the limits of the application of regional anesthesia have been extended of late. Recent years have brought no new fundamental principles; it is some of the results of recent anatomical work that I should like to detail to you to-night. I shall not repeat what Braun has already laid down in his classical monograph, but shall confine myself to the territory gained for local anesthesia since his last edition of 1907, correlating the experience of others with my own where I can.

THE HEAD.

The gain of the territory of the mouth, chin and jaws for regional anesthesia is to my mind

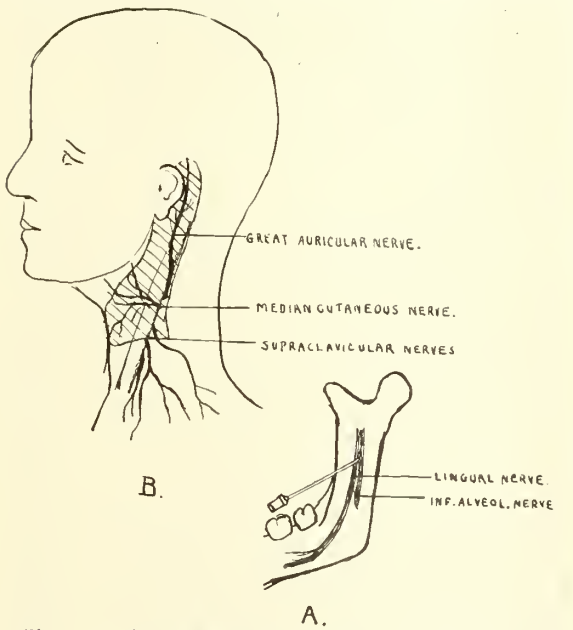

Fig. 1 (A) Position of needle for blocking third branch of trigeminus at the jaw.
Fig. 1 (B) Area of anesthesia after injection at posterior border of sterno-cleido-mastoid.

the most important advance in the surgery of this region that has been made for many years. By operating under regional anesthesia the risk of post-operative bronchopneumonia is very much lessened, the sense of security and the ease afforded the operator by having a patient who can clear his throat and open his jaws is very great, and hemorrhage, owing to the constriction of the vessels by the adrenalin is reduced to an easily controllable degree, rendering such measures as temporary ligation or compression of the carotid unnecessary. The picture of the constant struggle between anesthetist and operator, both working in a field drenched with ether fumes, of the half-awake, struggling patient, kept between cyanosis and aspiration of blood on the one hand and consciousness on the other, will soon, I think, be a thing of the past.

I wonder that the blocking of the alveolar nerves for extensive operations on the teeth and jaws has not been more extensively practised. I shall overstep the limits I set for this paper by describing it, as it is already explained by Braun in his last edition, but I should like to urge it upon your attention. The upper teeth, including pulpa and peridontal membrane, the alveolar process of the upper jaw and the buccal mucosa of the upper gums are innervated by the superior alveolar nerves from the second trigeminus. The oral mucosa of the gums and the palate are innervated by the palatine nerves and by the naso-palatine nerve of Scarpa, also from the second trigeminus. Thus we may anesthetize the whole upper alveolar process by anesthetizing the second branch after it leaves the round foramen. This is a somewhat difficult procedure, necessitating considerable practice. I shall refer to it later. A much simpler method, sufficient for the surgery of the roof of the mouth, is the separate blocking of the superior alveolar, the palatine, and the naso-palatine nerves. The superior alveolar nerves may be reached by a submucous injection parallel to the teeth, beginning in the middle line 1 cm. above the edge of the gums and proceeding backwards as far as the tuberosity of the maxilla, where these nerves lie directly beneath the mucosa. The branches for the front teeth do not lie submucously, but are separated from the anesthetizing solution by a very thin lamella of bone through which the solution diffuses in about 3 to 10 minutes. The posterior palatine nerves are blocked by an injection at the posterior part of the hard palate, the naso-palatine by an injection near the middle line; a few drops of novocain-adrenalin suffice. In this way the whole superior alveolar process and the palate may be rendered anesthetic.

Anesthesia of the mandible is more simple. The third branch of the fifth may be reached before its division into lingual and inferior alveolar nerves by an injection along the inner surface of the lower jaw, beginning 1 cm. behind and lateral to the last molar, and proceeding along the bone for 2-3 cm. This one deposit anesthetizes mandible, anterior portion of the tongue, mucosa of the mouth and middle part of the lower lip. For operations involving the chin it is further necessary to block the superior and median cervical nerves by a subcutaneous injection below the jaw. If we change the direction of this latter injection and deposit our solution along the posterior border of the sterno-cleido-mastoid muscle we can block the cervical

nerves as they emerge from behind this muscle and anesthetize a much greater area of neck and chin. These two deposits of novocain therefore, at the inner surface of the mandible and along the posterior border of the sterno-cleido-mastoid will give us an anesthesia of the lower jaw, the anterior portion of the mouth, including two-thirds of the tongue, the lower lip, the chin, the submaxillary fossa, and the upper cervical triangle. A supplementary subcutaneous injection below will give us the upper part of the neck and all that we need for a radical operation for cancer of the lip, with block-dissection of the glands, and if necessary, resection of the jaw.

A very extensive field is gained by direct injection of the trigeminal nerve-trunks at the base of the skull. These procedures are not easy and necessitate considerable practice on the cadaver, but their brilliant possibilities fully repay the difficulties encountered in acquiring their technic. As long ago as 1900, Matas reported the anesthetization of the second branch for resection of the upper jaw; alcohol injections of the trigeminal branches at the base of the skull for neuralgia, have been employed by Schlösser, Ostwalt, Harris, Patrick and others for a number of years, but it is only within the last year that communications have appeared concerning systematic nerve-blocking with local anesthetics at these points. A careful anatomical study by Offerhaus of Groningen gives useful data. He finds that the distance between the outer sides of the superior alveolar process at the last molars is exactly equal to the distance between the two oval foramina, and that the distance between the inner sides of the superior alveolar process at the last molars is equal to the distance between the round foramina. The inter-alveolar distances are readily measured in the living with a pair of calipers. The foramina rotunda lie a few millimeters behind and above a line drawn between the middle of the zygomata. If, therefore, we insert a needle directly under the zygoma at its middle point and introduce it for a depth equal to one-half the interzygomatous distance minus one-half the internal interalveolar distance, directing the point very slightly upwards and backwards, we will by mathematical calculation reach the second branch of the trigeminus at its exit from the round foramen. The patient's jaw should be open while introducing the needle. If the needle is properly directed a sharp pain will be felt when the nerve is reached; 5 cc. of a 1 to 2% solution of novocain-adrenalin should now be injected, then the needle withdrawn and a second 5 cc. be injected while the needle traverses the pterygoid musculature. The latter 5 cc. are not for purposes of anesthesia, but are injected so that the adrenalin content of the solution may cause a contraction of the internal maxillary artery and secure a field of operation comparatively bloodless.

The third branch may be reached by a similarly calculated injection. The oval foramina lie in a line joining the two articulatory processes of the tempero-sphenoid bones; the distance between them is equal to the external alveolar distance. The distance of the oval foramina from the surface of the skin is therefore equal to one-half the inter-tubercular distance minus one-half the external inter-alveolar distance. After this measurement is determined it is marked off on the needle, which is inserted just anterior to the articulation of the jaw and is introduced perpendicularly up to the point marked off. Offerhaus has constructed a special calipers with perpendicular wings that serve as guides to prevent the needle deviating from its proper course. The mathematical calculations followed by Offerhaus may be substituted by practice and experience, Braun deems them unnecessary. He guides his needle by the sense of touch, as do Schlösser, Ostwald, Harris and others who inject these trunks with alcohol in trigeminal neuralgia. Patrick, in a recent communication even considers the calculations misleading, and has found them to deviate considerably from the true measurements in certain types of skulls. Braun reaches the second branch in the pterygo-palatine fossa, feeling his way along the tuber maxillare; when the fossa is reached the needle suddenly slips forward and a sharp pain is felt in the face and cheek, a signal that the needle has touched the nerve-trunk. As a guide to the third branch he uses the pterygoid fossa, when the needle meets bony resistance at this place the point is withdrawn and its direction projected about 1 cm. farther backwards, it is then pushed forward to the original depth, corresponding to the distance of the pterygoid fossa from the surface of the skin; the foramen ovale lies at this point. Patrick uses the external pterygoid plate as a guide to the second branch; he feels his way around its anterior edge; his technic for the third branch is like Braun's. In an explicit article he gives directions for reaching the various trigeminal trunks and branches.

Braun has also anesthetized the first branch of the trigeminus, entering the orbital cavity and making his injections along its smooth lateral wall and the upper part of its medial wall. The injected solution is deposited entirely outside the common tendineous circle and the external muscles of the eye-ball. Anesthetization of the sensory nerves of the eye itself—the ciliary nerves, the ciliary ganglion and the optic nerve—is not to be expected as a rule; in order to accomplish this the anesthetic would have to be deposited behind the eye-ball inside the space formed by the external ocular muscles. The injection is followed by a protrusion of the eye and an edema of the lids of short duration. I have had no experience with injections of the first branch at this site, and must confess that I should hesitate to try them in view of the proximity of the vessels of the eye and of the possibility of a deleterious effect of the adrenalin-anemia. Enthusiasm for the elegance of the methods of local anesthesia is liable to carry one versed in its use too far. I do not think that we should lose sight of the fact that the risk of an ether narcosis would be gladly accepted by most patients when weighed against any possibility of danger to the eye. I should be inclined to wait until some sober and experienced observer can report a considerable series of cases without mishap, and barring a very urgent indica-

tion against ether, should attempt the intraorbital blocking of the first branch only in a case where the eye was already permanently damaged.

In making our plans for blocking the nerves of the head we should be guided by the innervation of the bony parts involved in the proposed operation. The first branch serves orbit, its contents and the neighboring sinuses. The nose and its dependent sinuses are served by the ethmoidal nerves from the first branch and also by the second branch; antrum of Highmore, whole upper jaw and both palates are innervated by the second branch alone. The third branch serves the lower jaw, the floor of the mouth, and the anterior two-thirds of the tongue. It is the cavities of the head that we have to consider in planning our sites of injection, the soft parts of the face are of no moment; they should always be blocked separately, in order to produce an adrenalin-anemia, and in order to make their anesthesia more complete.

Regional anesthesia is destined, in my opinion, to rob the surgery of the mouth and pharynx of its horrors. Who is there of us, who, laying aside the needle of the last suture after an extensive operation for cancer of the tongue, dazed by the fumes of ether, tired after an arduous struggle with hemorrhage and with a choking patient, has not stood and looked with trepidation on the result of his labors—has not felt that the fight was but begun, thoughts of aspiration-pneumonia menacing his ease and robbing him of the pleasure of a well-done task?

In eight resections of the maxilla under regional anesthesia, Braun had not a single post-operative pneumonia, in twelve patients operated upon for various cancers of the oral cavity he had two pulmonary complications, in these twenty cases a post-operative mortality of nil!—contrast this with the usual mortality of from 15 to 20%.

I hope that I have not unduly trespassed upon your attention by my dilation on the regional anesthesia of the head; it is true that explanations and words are of little avail here, a glance at Braun's photographs or the witnessing of one operation will do more towards converting you from general narcosis for operations on the head and jaws than the most plausible arguments, an hour's work on the cadaver more towards acquiring the technic than the most extensive theoretical deliberations.

THE NECK.

Recent years have added nothing of fundamental importance to our knowledge of regional anesthesia in operations involving the neck. The question of local or general anesthesia in goitre operations is not yet settled. The development of nitrous oxide anesthesia by Crile's school has done much towards making narcosis harmless and preferable where there is any question of mental shock under regional anesthesia. Leaving aside the mental element, local anesthesia has proved entirely adequate to a painless ligation of the thyroid arteries. In resections however there is one step that it is difficult to make painless, and that is the luxation of the goitre from its bed. Delivery of a goitre, especially if its capsule is adherent to the surrounding tissues, often involves pull on the nerves beyond the limits of their blocking. If the patient manifests pain at this stage it is far better to stop the operation until he can be brought under a general anesthetic than to subject him to the physical and mental shock of further attempts under an insufficient regional anesthesia. Braun in a recent article on local anesthesia in major surgery has, however, described an improved method of local anesthesia for goitre in which he pays particular attention to subfascial injections, to the neighborhood of the goitre capsule and to the peritracheal tissues, this last in order to block the inferior laryngeal nerves. His experiences with goitre are interesting; in 1906 he operated 30 goitres, only 3 of them under local anesthesia; in 1907 he had 24 goitres, 15 with local anesthesia; in 1908 he had 28 goitres, one a substernal gland, and he operated all of them under a perfectly satisfactory local anesthesia. The class of patients from which he recruits his material does not differ materially from the class we have to do with here; the population of upper Saxony is of a rather nervous and vivacious temperament, very different to the phlegmatic Swiss with whom Kocher, the principal champion of local anesthesia for goitre operations, has to deal. Kocher's anesthesia (he uses the old infiltration method) is really little more than an anesthesia of the skin; little attempt is made to anesthetize the deep parts; I think that those who have seen him will concur with me that such a half-anesthesia would be utterly out of the question with our patients here. I have had no personal experience with the new technic for goitre that Braun describes, but should, on the weight of his authority, urge its trial in proper cases.

THE UPPER EXTREMITY.

There are two methods for anesthetizing the whole arm. In the first, described by Hirschel, the brachial plexus is blocked in the axilla; in the second, described by Kulenkampff, the plexus is reached in the inferior cervical triangle, in the space between scalenus and first rib.

Hirschel proceeds as follows: The arm is elevated and pressure made upon the axillary vessels by a compression pad applied well up under the pectoral muscle. This measure is to prevent the rapid absorption of the anesthetizing solution—whether it is necessary I cannot say, as I lack personal experience with this method. With the finger on the axillary artery as a guide a 2% solution of novocain plus adrenalin is injected into the axilla, the needle being directed in the axis of the humerus well up under the pectoral muscle, the solution being injected upwards for the median nerve, and anteriorly for the ulnar nerve; a third depot placed behind the artery blocks the radial nerve-trunk. Twenty to thirty cc. of solution are used; anesthesia is complete in 20 to 40 minutes and lasts 1½ hours. Hirschel cites three cases: a gunshot wound of the elbow, an amputation of the humerus, and a tuberculosis of the ulna; anesthesia was complete in all three.

Kulenkampff goes in directly above the middle of the clavicle, just to the outside of the subclavian artery, whose pulse is fixed by the fingers.

The needle is directed inwards and posteriorly, in a line which if projected backwards would cut the second or third dorsal spinous process. After traversing skin, superficial and deep fascia, he deposits 20 cc. of a 2% solution in the space between scalenus and first rib. A tingling sensation down the arm denotes that the plexus has been reached by the needle. Anesthesia is complete in about 15 minutes, if a 3% solution is used in 6-7, and lasts 1½ to 2 or 3 hours. The whole arm is anesthetic, with the exception of the outer deltoid region and the inner side of the humerus at the arm-pit. K. reports 25 cases, satisfactory anesthesia in 20, 3 needed the supplemental use of ether (these were the first trials). No untoward accidents.

Whereas these two methods of anesthetizing the whole arm necessitate care, and to my mind carry with them a certain element of risk owing to the proximity of the axillary vessels, the method already described by Braun of anesthetizing the hand has, I think, not received the attention it deserves. A small quantity of solution, 10 cc. of 2% novocain, suffices for anesthesia of the whole hand; the injection is simple and entirely without danger. The three nerves of the hand are anesthetized separately at different points, one nerve, combinations of two, or all three being anesthetized according to the site of the operation proposed. The ulnar is most conveniently reached at the inner condyle of the elbow, the radial is blocked above the wrist by an injection carried subcutaneously across the radial side of the back of the forearm, the median is also reached above the wrist. The needle being inserted at the ulnar side of the long palmar tendon is pushed *through the fascia* and then directed radially so that its point lies under the tendon of the radial flexor muscle. By injecting all three of these nerves with a few cc. of novocain plus adrenalin an anesthesia of the entire hand is obtained in from 10 to 15 minutes, which lasts for 1 to 2 hours. I think that regional anesthesia should entirely supplant general anesthesia for operations on the hand; with this method of nerve-blocking we need no longer fear the edematization of infected territory in operations on whitlows and felons, the bleeding is greatly lessened by the adrenalin injection, and the advantage in tendoplasties and complicated operations on the hand of having a patient who can move his muscles at a word from the operator is obvious.

As regards the plexus anesthesias of the arm, they *do* carry with them some risk of injury to the great vessels, a risk great enough perhaps to offset the unpleasantness of a general anesthetic. Still I think that a certain field of usefulness will remain for plexus anesthesia, not only in decrepit patients and others where a general anesthetic is contraindicated, but most particularly for the general and for the country practitioner, who alone and without assistance can secure a perfect anesthesia and a relaxed musculature that should prove invaluable to him in the treatment of fractures and dislocations, and in the emergency surgery of the upper extremity.

CHEST.

Hirschel has performed thoracoplasties and extensive operations for cancer of the breast under regional anesthesia. He first blocks the nerves in the axilla in the manner described above, adds a subcutaneous injection elliptically about the mamma, and finally blocks the intercostal nerves by depositing 2 or 3 cc. of novocain in each of the first four or five intercostal spaces, using the borders of the ribs as a guide. Regional anesthesia is contraindicated in adipose patients on account of the difficulty of determining the intercostal spaces when they are covered by too deep a layer of fat. Hirschel reports three operations for mammary cancer and two thoracoplasties, all of them with good anesthesia.

I have had occasion to use a procedure which may perhaps prove useful in certain cases of inoperable cancer of the breast. The patient was an old woman with an extensive Paget's disease, enclosing the whole side of the thorax like a cuirass. Pain had prevented her sleeping for many nights. I injected the 6 upper intercostal nerves, first with novocain-adrenalin, then with 1 cc. of 96% alcohol, choosing my site of injection in the back, a handsbreadth from the middle line. There was a sharp pain after each injection of alcohol, followed by numbness and relief which lasted about a week, so that after the injection the patient slept for the first time in weeks. In another case I should substitute osmic acid, acetone or chloroform for alcohol in order to make the degeneration of the nerves more permanent. The alcohol was evidently diluted in the tissues by the previous injection of novocain to a concentration which did not suffice to produce permanent degeneration of the nerves. The method is not difficult, I should be grateful for its repetition and trial by others.

ABDOMEN, HERNIA, GENITAL ORGANS, ANUS.

The last five years have not brought any fundamentally important advances in the local anesthesia of these regions. Suitable for local anesthesia are those abdominal operations where we may be sure of our procedure before opening the belly; gastrostomy for cardial or esophageal obstruction, colostomy, the closure of simple fecal fistulas, and gastroenterostomy in certain cases of well-defined and uncomplicated pyloric obstruction may all be performed under regional anesthesia.

After a rhombic area of the skin about the site of the proposed incision has been blocked off, a liberal quantity of ½-1% novocain-adrenalin should be injected subfascially and properitoneally; this latter point is most important in order to anesthetize the parietal peritoneum. If dragging upon or otherwise maltreating the mesenterial attachments of the viscera is avoided the operation will be entirely painless. Local anesthesia is unsuitable for any operation involving exploration of the viscera, even for appendectomy in the interval—we cannot determine the position of the appendix before entering the belly, and the delivery of an adherent, a retrocecal or a retroperitoneal appendix cannot be accomplished without unduly distressing the patient.

One of the most grateful operations for regional anesthesia is hernia. Small epigastric and umbilical hernias need no further allusion; large umbilical hernias requiring Mayo's operation call for general narcosis.

The technic for inguinal and femoral hernia is simple. The corners of a rhombic area are marked off by four intradermatic wheals, the first about two inches medial to, and one inch below the superior iliac spine; the second at the base of the scrotum; the third and fourth above and below the line joining these two points. The four wheals are connected by a subcutaneous injection, and a further deposit of novocain is made subfascially at the upper outer corner to block the ileo-hypogastric, the ileo-inguinal and the genito-femoral nerves; the whole mass of the cord and the neck of the hernial sack is then picked up in the inguinal canal with the fingers of the left hand, and 5 cc. of 2% novocain are injected subfascially at the head of the canal into the vicinity of the cord. Ileo-inguinal and spermatic nerves are blocked at this point and the whole contents of the scrotum made anesthetic. A similar technic is followed for operations on the testicle, varicocele and hydrocele. For femoral hernia point two is placed lower and more laterally, on the thigh; the technic is otherwise the same. Large hernias, necessitating the replacement of considerable amounts of viscera, and hernias in very adipose patients should be operated upon under a general anesthetic. Tying off the neck of the sack, if the ligature is placed high sometimes causes a momentary twinge of pain; the anesthesia is otherwise complete, takes about 10 minutes to induce and lasts 1½ hours. I can strongly recommend these methods. In clinics where local anesthesia is in use for hernias patients demand it in preference to a general anesthetic. Braun performed 119 operations for hernia in 1908, 72 of them under local anesthesia. The report of the surgical clinic in Heidelberg for 1910 gives 231 adult patients with inguinal hernias, all but 9 of them were operated upon under local anesthesia. Cushing's studies on local anesthesia in hernia made in 1900 were pioneers; the principles he laid down are the ones we follow to-day; he but lacked the one all-important detail of the addition of adrenalin to his anesthetizing solution. I do not know why his work has been so little regarded now that our methods are more perfect—one might say here that "the evil that men do lives after them"; it was Schleich's utterly insufficient infiltration anesthesia and his fantastic theories concerning the anesthetic properties of indifferent solutions that did the cause of local anesthesia an injury from which it will take many years for it to recover.

A further operation in this region that is suitable for local anesthesia is the sectio alta of the bladder. The space of Retzius should be thoroughly infiltrated with novocain; the bladder wall often needs a separate injection if its incision is to be painless. It is best anesthetized after having been laid bare.

Let me allude to a small detail of technic in anesthetizing the prepuce for circumcision. The base of the inner leaf of the prepuce is innervated by fine filaments that pierce the tunica albuginea at the coronary sulcus; in order to anesthetize these properly the prepuce should be held tense and particular attention should be paid to the infiltration of the tough subepithelial tissue at its base, where it joins the glans; an insufficient anesthesia of the inner leaf often results from neglect of this detail. Braun uses a 2% solution, thus avoiding the edema produced by larger quantities of a weaker solution.

I have had litle success with local anesthesia in operations for hemorrhoids; a complete relaxation of the sphincter is necessary for a thorough dilatation of the anus if the muscles are not to be torn instead of stretched. An anesthesia extensive enough to render this part of the operation painless is difficult to secure.

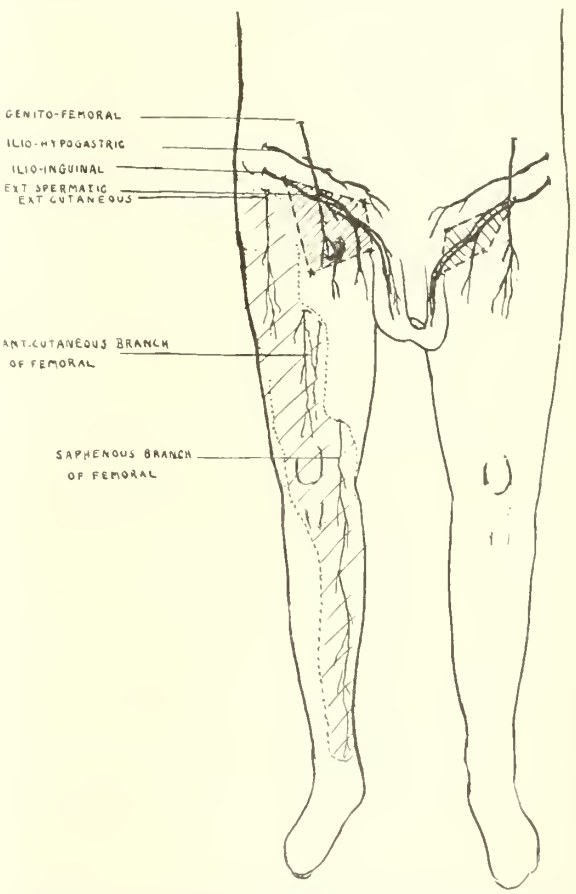

Fig. 2. Left side shows: (a) Sites of injection (marked by crosses), and area to be blocked off (shaded), for femoral hernia. (b) Area of anesthesia (shaded) for skin-grafting, obtained by blocking external cutaneous and femoral nerves.
Right side shows sites of injection and area to be blocked off for inguinal hernia.

LOWER EXTREMITY.

The innervation of the lower extremity is so complicated, the nerves reach the thigh at so many and at so widely separated points that an anesthesia of the whole thigh and leg is a matter of great difficulty. Its practical application will, I think, always be very limited. Läwen records 9 cases where he achieved this *tour de force;* he confined his trials to emaciated patients of weak

musculature. The femoral nerve was reached by a subfascial injection below Poupart's ligament 1-1½ cm. to the outside of the femoral artery, the external cutaneous was blocked by a subcutaneous and a subfascial injection below and just medial to the superior iliac spine, the cutaneous branches of the obdurator were anesthetized by a deep injection into the inner aspect of the thigh near its middle; it was the blocking of the great sciatic that offered the main difficulty. Läwen injected 30 to 40 cc. of a 3 to 4% solution of his bicarbonate salt of novocain. The patient lying face downward, he first palpated the nerve in the gluteal fold, about midway between the tuber ossis ischii and the trochanter; the gluteal muscles being relaxed he could follow the nerve higher up, roll it beneath his fingers, and gain an opinion as to its depth. He approached the nerve with the needle from both the inner and the outer sides, injecting medially from a point 3 cm. to the inside of the trochanter and laterally from a point 2 cm. to the outside of the tuber of the ischium. The posterior cutaneous nerve is blocked by the same injection. Läwen was able to perform 3 amputations at the middle of the thigh and 6 operations at lower levels with perfect anesthesia. These anesthesias are interesting as showing how large an amount of novocain may be injected with impunity; from 0.7 to 2.1 gm. was used, one patient with a malignant endocarditis suffered from dyspnea and cyanosis for about 10 minutes, no other ill effects were noted.

The indications for this form of anesthesia are too restricted and its technic too difficult for it to come into general use. The technic of the blocking of more limited nerve-areas of the lower extremity, however, is simple and these forms of regional anesthesia are of wide application.

Nyström and Lennander first suggested blocking the external cutaneous for skin-grafting. A few cc. of 2% novocain-adrenalin injected subcutaneously and subfascially in a medial direction at the inner side of the superior iliac spine will anesthetize an area on the outside of the thigh varying in size, but averaging an area little smaller than that of the hand. This anesthesia can be extended over the whole front of the lower extremity from above the middle of the thigh to the ankle by blocking the femoral nerve as described above. If both femoral and external cutaneous are blocked an area can be anesthetized that will suffice for the most extensive skin-graft.

I can strongly recommend injections of weak novocain-adrenalin solutions (½-¾%) directly along the course of the veins for varicotomy. The anesthesia is complete, the bleeding is lessened by the adrenalin, and the extirpation of the varicosities is made particularly easy by the perivascular edema consequent to the injection of large quantities of weak anesthetic solutions.

Local anesthesia in the leg is a much simpler matter than in the thigh; the leg and foot are innervated entirely from three main branches—the saphenous branch of the femoral, the tibial and peroneal branches of the sciatic nerve. The saphenous may be blocked by a subcutaneous injection beginning at the tuberosity of the tibia and extending medially and backwards across the tendon of the semitendinosus to the popliteal space. The tibial nerve is best reached farther down, before it divides into the medial and lateral plantar nerves at the level of the internal malleolus. The needle is inserted 1 cm. to the inside of the Achilles tendon and is pushed forward until it strikes the bone, it is then withdrawn slightly and a few cc. of 2% novocain-adrenalin injected. This one injection suffices to anesthetize the whole sole of the foot; if we add a subcutaneous injection circularly around the ankle, and one into the first intermetatarsal space, which blocks the deep peroneal, we get an anesthesia of the entire foot. This anesthesia of the foot and leg is not new, it is recorded by Braun in his book, but I take the liberty of calling it to your attention because I feel that its ease and simplicity entitle it to an application wider than that which it has received.

MISCELLANEOUS.

Lerda of Turin first called attention to the use of local anesthesia in recent fractures. With a stout needle he thoroughly infiltrates the periosteum and the soft tissues at the site of fracture; he reports some 30 cases and finds that in 10 to 15 minutes the spasm of the muscles involved by the fracture ceases, reduction of deformity is then painless and easy. This method was afterwards recommended by Quénu and extended by him to the treatment of dislocations. Quénu infiltrated the ligaments, the periarticular tissues and introduced the anesthetic solution into the joint-cavity itself; he found that dislocations of some standing were easily and painlessly reduced. I have had no experience with this application of local anesthesia. The anesthetizing of fractures would seem to me to be of value, particularly to the general practitioner, who would be able to work without the assistance of an anesthetist; the introduction of considerable quantities of an anesthetic drug into joint-cavities however, would seem to me to carry with it some little risk of too great an absorption and would make me hesitate to apply Quénu's procedure in dislocations.

Falkenstein has recently recommended periarticular injections of eusemin (a proprietary cocain-adrenalin mixture) in acute attacks of gout for prompt relief of pain.

A consideration of Bier's venous anesthesia, and of Cathelin's sacral epidural injections scarcely falls within the limits of this paper.

In the effort to make this map of the territory gained for local anesthesia since 1907 as complete as possible, even though I have had to confine myself to merely sketching in contours, I feel that I have already trespassed too considerably upon your attention to allow of further consideration of the general status of local anesthesia, its indications and contraindications. A word as to the preparation of the patients—I have usually given 0.3-0.5 gm. of veronal, to be taken on the tongue late the night before operation. Morphia should always be given, and the addition of a small amount of scopolamin is of advantage, particularly with aged and decrepit patients, upon whom scopolamin

seems to have an especially good soporific action and who stand the drug well. I usually give 0.0003 gm. scopolamin hydrobromide and 0.01 gm. morphin sulphate hypodermically one and one-half hours before operation, repeat the dose in one-half hour, then if the patient is not asleep give a third dose of 0.0003 gm. scopolamin alone without the morphin one-half hour before the operation. This is, you see, a small dose, 6 to 9 tenths of one milligramme of scopolamin in all. If the slightest suspicion as to the adequacy of the proposed local anesthesia exists, the patient should be prepared for a general anesthetic.

The operator should explain to the patient before beginning the anesthesia that he will feel the pain of the first pin-pricks but nothing more, and he should most particularly request the patient to let him know directly he feels any pain, explaining that he does not want him to suffer in silence but that, on the contrary, he would be interested in knowing whether and where pain is felt. Before beginning the incision he should assure himself of the completeness of the anesthesia by pricking the skin and inquiring as to sensibility. The patient should not know when the incision has been begun. Once pain is felt, STOP! Either complete the anesthesia by further injections of novocain or go over to general anesthesia. There is no sight more harrowing than that of an operator fighting his way to the end of an operation under an insufficient anesthesia, with a frightened, squirming patient whose consciousness is there, but whose confidence is gone.

Local anesthesia is contraindicated in children and in patients not amenable to reason; it should not be forced upon unwilling subjects nor tried when there is any reasonable probability of failure.

As to other objections: local anesthesia does not admit of hurried operating, nor of any but gentle and careful handling of tissues, any violence or dragging upon the nerves causes pain; whether these objections are points in its favor I leave it to you to say.

TO CONCLUDE:

(1) Extensive operations involving the mouth, the tongue, the jaws and the lips in mentally normal adult patients should be performed under regional anesthesia.

(2) The hand and foot may be easily and simply anesthetized; operations on these members should be performed under regional anesthesia.

(3) Skin is easily and simply grafted under regional anesthesia, which is the anesthesia of choice.

(4) Many extensive operations on the chest, abdomen and extremities may be performed under regional anesthesia.

(5) Injection of the intercostal nerves with osmic acid or similar substances may be of use in certain cases of inoperable cancer of the breast.

(6) The trial of local anesthesia in reducing deformity is urged in certain cases of fracture; this may prove especially valuable to the general practitioner.

(7) Novocain is the drug of choice; it should supplant cocain in regional anesthesia.

(8) The infiltration anesthesia of Schleich is to be abandoned as entirely inadequate in the great majority of cases; for it is to be substituted regional anesthesia as developed by Cushing, Crile, Hackenbruch, Matas and especially Braun.

(9) Local anesthesia should not be forced upon unwilling patients; its use should not be tried in unsuitable cases; its limitations should be strictly observed.

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ANESTHETICS, METHODS AND INDICATIONS.*

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The practice of employing but one anesthetic or one mode of administration for all cases has gone by; in this paper I will discuss the special indications for individual anesthetics, sequences and methods. I will confine my attention to four fundamental substances: Nitrous oxide, Ether, Chloroform, Ethyl Chloride, and to sequences of the same.

In determining the selection for any case, the most important consideration is the *safety of the patient*. Two questions present themselves: (1) Which is the safest anesthetic for brief operations, and those not requiring total muscular relaxation?

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(2) Which is the safest anesthetic for operations demanding profound or continuous narcosis?

It is generally admitted that nitrous oxide is the safest anesthetic known, it is not unpleasant to inhale, is rapid in its effects, and has no uncomfortable sequels. On the other hand it is expensive, gives but a light anesthesia, and there is a tendency to muscular rigidity and asphyxial movements—all factors which combine to limit the employment of this valuable agent. Andrew's discovery that a mixture of nitrous oxide and oxygen prolongs its anesthesia, and removes to a considerable degree the other objectionable features, is a very important step in the advancement of the art of anesthetics. This, coupled with Crile's method of local anesthetization and pre-operative use of morphine, makes nitrous oxide a safe and efficient anesthetic for prolonged operations. It is, however, still a question if the elaborate details of Crile's method will become general. The complicated apparatus, the skill necessary for its use, and the considerable extra expense (nearly $10 an hour) are at the present time quite prohibitive to its general application.

Ethyl chloride is easy to administer, is portable, and inexpensive, but there have been reported too many bad results to make it a drug that should be indiscriminately employed. It is so quick and profound in its action, that the inexperienced anesthetist is prone to give too large a dose.

It becomes necessary to consider, then, our second question: What anesthetic most safely produces muscular relaxation where long or profound narcosis is needed? "It may be unhesitatingly affirmed," says Fredrick Hewitt in his excellent manual, "that ether enjoys this position."

While there are many factors invalidating the statistics of deaths under anesthetics, such as (1) failure to report, (2) the attributing on the one hand all deaths occurring while under the influence of an anesthetic as due to that drug, and the assigning on the other hand some of the later manifestations as pneumonia, or degeneration of the liver to causes other than the anesthetic, and (3) the custom of administering ether to those profoundly ill or in a desperate condition rather than chloroform; yet after making due allowances for these considerations, wide and long time observations compel us to admit that ether is six times as safe as chloroform.

Besides the safety of the patient there are two other important factors which govern the selection of anesthetics in individual cases, namely, the *state of the patient* and the *surgical procedure*.

After an experience of nearly 9,000 anesthetizations I would emphatically agree with Hewitt when he says: "The typically healthy patient is by no means necessarily the best subject for an anesthetic." The asthenic patient, if not too profoundly depressed by his morbid condition, is as a rule a better subject than the healthy and vigorous child or adult.

I will now briefly consider the conditions of the patient which influence the choice of the anesthetic.

Sex: Women having as a rule a less vigorous physique than men, more readily pass under the influence of an anesthetic. So, on the other hand, effeminate men, or masculine women, approach the type of anesthesia usually manifested by the opposite sex. As most of the fatalities under chloroform occur in the early part of the administration and among patients who struggle, it follows that the deaths from that drug are twice as frequent among men than women. It is better, then, in such vigorous subjects to employ ether, preceded, unless there is some individual complication, by morphine hypodermically; especially in the initial stages should ether rather than chloroform be employed.

Age: The routine administration of chloroform for children is wrong. If the child is already asleep, he may be given chloroform until under the influence of that drug, and then ether be substituted before the operation. But in this instance there is no psychical factor, and the administration must be so gradual that there would be no initiatory overdose. I have been able about twenty times to change normal sleep to a surgical anesthesia, but great carefulness must be exercised or the little patient will awake during the process.

In general in the handling of children there should be truthfulness, kindness, firmness and tact. If force becomes necessary ether must be the anesthetic of choice. The information as to the depth of anesthesia that can be derived from the pupillary reaction in older children and adults, is wanting under four years of age; and, since chloroform so often produces in them so deep and tranquil breathing that it is often impossible, under that drug, to ascertain the depth of the anesthesia, it follows that in the very young ether is the anesthetic to be administered. Two other factors of great importance come in here, namely, acid intoxication and fatty degenerations, conditions which much more frequently follow the use of chloroform than ether. Again, the after effects of ether are much less noticeable in children than adults. If the ether be administered *warm*, it can be more quickly and safely given, and with but little danger to the respiratory apparatus.

Children vomit more readily than adults, and a little chloroform may be added if straining symptoms arise, but the chloroform should be given on a separate mask or on a piece of gauze that can be withdrawn at any time. Ether and chloroform evaporate with different degrees of readiness, and if they be put upon the same mask, the child will be receiving chloroform a much longer time than the anesthetist supposes, if he mixes the two anesthetics upon the same gauze. One must never forget that the height of anesthesia in chloroform persists for a short time after its withdrawal. It has been remarked there are very few fatalities from ether if the chloroform bottle is never opened. I regard this detail of utmost importance. The sudden deaths after a successful initiation and during operation under ether more frequently occur when chloroform has been added. If chloroform is used at all then let it be so used that its administration can be immediately and totally discontinued.

Patients in advanced years take anesthetics better

than the middle-aged and vigorous subjects; there is less spasm, smaller quantities of the drug are used, and for that reason, doubtless, they are less liable to vomiting. Nitrous oxide alone, should not be used for the aged, but nitrous oxide and oxygen is good for the senile.

Chloroform is fairly well borne by the aged, especially so, as such people are frequently subject to bronchitis.

Temperament: Temperament has a most marked effect on the choice and mode of administration of an anesthetic. The excitable patient had better be put under by nitrous oxide. Great circumspection must be exercised in the use of chloroform with such an individual. To people who object to the smell of ether, a few drops of the oil of pine needles put upon the mask will, on account of its pleasant pungency, to a great degree overcome the disagreeable odor of that drug. This is especially so if the patient inhale for a few times the pine needle vapor alone, he then can hardly tell when ether is added to the mask. There is another advantage in this procedure, and that is it prevents to quite an extent the overproduction of saliva and mucus. The most important thing for temperament is tact, and tact can neither be bought nor given away. Metaphorical "hot air" is a very important essential for good anesthetization.

Habits of Life: The excessive use of alcohol, tobacco, and narcotics have an important bearing on the choice and mode of administration of anesthetics. Alcoholic subjects are peculiarly bad patients. In some of these nitrous oxide alone goes no farther than analgesia, and if the nitrous oxide is mixed with oxygen the narcosis is quite frequently insufficient. Alcoholics take ether straight very poorly, and chloroform is dangerous to them. Such patients nearly always require mixed anesthesia, morphine and atropine in relatively large doses before the operation. Ether should be the main anesthetic, supplemented with chloroform on a separate mask as indicated.

Morphine habitues should have an appropriate initial dose before the operation. Heavy smokers frequently show great insusceptibility to nitrous oxide having frequently exaggerated spasms of the muscle of the mouth, jaw and neck. In such cases ethyl chloride followed by ether or ether preceded by morphine are indicated. High livers and plethoric individuals have the same objectionable characteristics, and their management should be along the same general lines. Morphine, however, should never be given when there is a history of idiosyncrasy against it. This I regard as a very important point; fatal results have undoubtedly been due to a neglect of this investigation.

General Physique: In the obese and plethoric there is a marked intolerance to any anesthetic or mode of administration which limits to any considerable extent the air supply. In such people the upper air passages easily become so engorged as to greatly lessen their capacity. The careful administration of chloroform or warmed ether vapor, preceded by a judicious use of morphine is indicated. Nitrous oxide alone is borne poorly by such people.

Anemic patients do well under ether, nitrous oxide or nitrous oxide and oxygen, but chloroform is poorly borne by such patients. The condition known as *status lymphaticus,* which is manifested by enlarged adenoids, enlarged tonsils, lingual tonsils, enlarged spleen, etc., is an especial contra-indication to chloroform. Hence, under no circumstances should chloroform be given for tonsilar or adenoid operations. Chloroform takes its deadliest toll in just these cases.

Respiratory System: Ether is contra-indicated in acute respiratory troubles. In all respiratory difficulties the anesthesia should be as light as possible. Nitrous oxide and oxygen is the anesthetic of choice, or if these be not at hand then chloroform or possibly warmed ether.

In dyspnea from laryngeal disease, ether per rectum is indicated, indeed, in about six cases that I have seen it was the only method of procedure possible. In these instances the patient was put to sleep in the ordinary way and the ether vapor then pumped into the rectum by a two bulb apparatus. I have kept patients asleep for an hour or more by this method.

In angina Ludovici and cellulitis of the submaxillary and cervical regions there is extreme danger in any anesthetic. Light anesthesia only, should be attempted, a careful mixture of ether and chloroform by the *open* method. Nitrous oxide, closed ether or ethyl chloride are contra-indicated in such cases.

In recent pneumonias or pleurisy, use chloroform with great care, for the heart in such cases is apt to be weakened. In all respiratory troubles where there is marked embarrassment employ oxygen whether the anesthetic be ether, nitrous oxide, or chloroform. If the respiration be wholly abdominal or entirely thoracic, oxygen should be at hand and the anesthesia be very slight. Open methods must be used in all cases and generally it will be necessary to employ ether warmed or ether helped out by chloroform.

Circulatory System: There is more misconception of the dangers arising from the so-called weak heart under anesthesia both among the profession and the laity than on any other topic. Organic heart troubles are not in themselves contra-indications for anesthetization, and vigorous hearts on the other hand are not a guarantee of safety. A rapid heart due to nervousness usually improves under judicious anesthetization, while one due to shock exhaustion or dyscrasia remains rapid under all conditions. There is every grade of abnormality from inconsequential nervousness to a condition where the circulation is so poor as to render the question of operation very doubtful. Oxygen in these latter cases is a very important adjuvant.

Chloroform is indicated in arteriosclerosis. For this reason doubtless this anesthetic is quite well borne by the aged. When there have been recent subconjunctival hemorrhages, chloroform is the safer drug. In such cases the drug must be administered very slowly and frequently it is better to use morphine before the anesthetization.

In abnormally slow hearts great precautions must be taken. Such people are apt to have respiratory difficulties, ether helped out by chloroform by open methods are indicated. Persons with apnea do not take kindly to nitrous oxide.

All asphyxial strain must be avoided in fatty or degenerative changes in the myocardium.

In aneurysm, chloroform is the drug of preference, as it is also in venous thrombosis, for the struggling that may occur in any of the closed methods or by the use of ether might dislodge the clot. "Indeed it is by no means improbable," says Hewitt, "that some of the sudden deaths that have occurred under anesthetics have in reality arisen from cardiac or pulmonary embolism."

In shock, collapse, and intestinal obstruction, light anesthesia by ether by the open method alone is indicated. Nitrous oxide, chloroform or ethyl chloride are contra-indicated. Oxygen should be freely used either with ether or with nitrous oxide.

Nervous System: People in coma require no general anesthesia. Persons obtunded by poisons absorbed in the course of intestinal or renal disease require but light anesthesia, generally ether. Ether is contra-indicated in all cases of insanity.

In renal disease use light ether anesthesia or nitrous oxide with oxygen. Chloroform contrary to previous teachings in this regard is, according to the latest authorities, contra-indicated in eclampsia. Anesthesia should be short and light in kidney diseases.

In diabetes there should be a course of alkaline treatment before operation and ether instead of chloroform used, and the anesthesia should be short and light.

In all operations upon the gall bladder ether should be employed. Because ether decreases the coagulation time of the blood, its action is probably beneficial in certain hemorrhagic conditions, such as hemophilia and jaundice.

In obstetrical cases, unless there are symptoms of eclampsia, chloroform still holds the preference. Nitrous oxide should not be given in pregnancy after the sixth month, lest excessive clonic muscular movements set up.

Under the head of the surgical operation as a factor I will say in all cases where there is likely to be profound reflex irritation, or where there is a demand for complete muscular relaxation, that ether is by all means the anesthetic of choice. In rectal operations, chloroform is particularly dangerous. Ether preceded by morphine is indicated in these procedures. To obtain muscular relaxation in order to set dislocations of the large joints ether should be employed rather than chloroform.

As before stated, chloroform is contra-indicated in adenoid and tonsilar operations. The same is true with the extraction of teeth. A very large percentage of chloroform fatalities have occurred in the dental chair. For prolonged operations on the mouth and nose some method by bulb action whereby the anesthetic vapor (preferably ether) can be supplied, and the anesthetist keep out of the way of the operator, is indicated. Brophy's inhaler or some such similar apparatus is excellent in such operations as hare lip or cleft palate.

Posture of the patient is often a factor in head operations. In bloody operations on the nose, nasopharynx and mouth the patient should be placed so as to favor the expulsion of the blood from the mouth and nose, and to prevent its flowing back into the larynx. Posture, the depth of the anesthesia, the kind of anesthetic used, and its mode of administration has a great deal to do with this annoying and sometimes very dangerous complication. The anesthesia in this case must not be so profound as to destroy the pharyngeal reflex. Too profound anesthesia must not be attempted in these operations.

For adenectomies and simple extraction of teeth nitrous oxide is good, but for the same procedure warm ether can be used to advantage.

If the actual cautery is to be used ether or chloride of ethyl must not be employed. If the operator uses an exposed light for illumination the closed ether method must be employed.

Enucleation of the eye seems to be attended with marked reflex disturbance, hence this procedure demands ether. Iridectomy, however, can be performed under chloroform.

Nasal anesthetization by means of nitrous oxide or by nitrous oxide and oxygen is not invariably successful, for reflex movements, loud phonation, obstructed breathing, are not uncommon, so in rather long operations for teeth extraction or tonsilectomies ether in some way or other must be used. Nitrous oxide may be used to initiate, and ether employed to prolong the anesthesia. This can be done readily by a double bulb apparatus.

If the trunks of great nerves are cut or wounded, blow upon blow will fall upon the nervous system, and it is imperative in such cases to benumb the nerves with cocaine, so they will not transmit these insults. I have seen cases, where I am positive that these frequent nerve shocks killed the patient.

Again many of the disagreeable reflexes in abdominal operations, such as straining and interference with respiration, are readily obviated by a very short cessation of all manipulations. In the interval of rest the person will be put into a deep safe slumber; while if the anesthesia be forced and the manipulations kept up at the same time there is a danger of an overdose of narcotizing vapor. Especially in painful operations upon children is there a danger of fatal syncope following the cessation of the painful procedure, if too much anesthetic is continually administered. The anesthetist should be the sole judge of how to proceed under such circumstances. This is one potent reason why the anesthetist should not only be experienced and skilled, but he should also be a physician. If he feels he is an equal with the operator he has no hesitation in making requests, suggestions, or even orders. The surgeon is the captain, but the anesthetist is the pilot and the operative voyage is near a dangerous shore.

In the July 1st ('11) number of the *Journal of the American Medical Association* Dr. William T. Coughlin described a safe, simple and certain

method of producing brief, general complete anesthesia, which he called "ether rausch." The anesthesia was accomplished by air exclusion and a rapid pushing of the anesthetic, unconsciousness being produced in a minute and a half or thereabouts and lasting from three to ten minutes. He stated that Prof. Lindner of Dresden had used it 5,000 times with satisfactory results. In Prof. Lindner's method the ether is given cold save as it is warmed by re-breathing.

In 1893 I wrote about a method of quick induction of anesthesia by ether, which, in time of induction, duration and lack of the usual sequels of that drug resembles ether "rausch," but is, I believe, much more agreeable and just as efficient. The apparatus I used was very simple, composed of a tin cone, rubber bag and a rubber mouthpiece. In the cone I placed a sponge or gauze, wrung out of hot water, I wrap a hot towel about the apparatus, and cover that by a dry towel to retain the heat. I sprinkle a few drops of an aromatic oil (preferably oil of pine needles) on the sponge. I then request the patient to take a free breath of this aromatic vapor. I then add about a half ounce of ether, bring the inhaler gradually to the face and in a few seconds completely shut off all air and request the patient to take full breath. I usually obtain a quick and not disagreeable anesthesia. This method has a distinct advantage over nitrous oxide in several respects, in simplicity of apparatus, cost of administration, duration of anesthesia and at the same time this method has practically none of the disagreeable sequels of ether. For adenectomies, tonsillectomies, extraction of teeth, lancing of abscesses, felons or carbuncles, or any painful procedure, such as divulsion of sphincter ani that can be done in a few minutes, it is ideal. I have given ether in this manner about 600 times for the extraction of wisdom teeth, teeth outside the arch, and in those cases where quite a number of teeth had to be extracted at the same operation. In my opinion wisdom teeth should usually be extracted by elevators, a procedure taking perhaps a little more time than the forceps, but one which does not break the teeth, and which leaves the gums in good condition. For Dr. Shaw of this city who employs such a method I administered ether about 250 times. Last year out of forty cases for him, only one person vomited at all, all made a quick recovery from the anesthetic, being able to leave his office in from one-half to an hour. Dr. Shaw is of the opinion that this method for such cases is superior to nitrous oxide, somnoform, bromide of ethyl or chloride of ethyl.

I find little difficulty in producing anesthesia by this method as a rule. I put the mask upon the face excluding the air completely. By the time the patient has taken twelve or fifteen breaths he has lost consciousness. The pupils are dilated, corneal reflex is present, breathing accelerated, pulse strong and full and face flushed. The pharyngeal reflexes, however, are not lost so that blood is not likely to go down into the trachea, and a tooth slipping from the forceps is not liable to drop into the windpipe but will be either swallowed or spit out. I like this method better than any other for bloody operations on the nose, nasal pharynx, tonsils or mouth, because the patient is not liable to choke from the inspiration of blood or foreign substances.

In 1896 after three years of experience with this method, I made the following conclusion as to its advantages (*Southern California Practitioner,* August and September, '96). (1) Ease and rapidity of production of anesthesia, average time less than five minutes. (2) Small discomfort to the patient, but little excitement or coughing. (3) Ability to push the ether rapidly, a factor which almost entirely takes away the danger of vomiting during an operation. (4) Small amount of ether used, about four ounces an hour. (5) Even and quiet repose during anesthesia. (6) Increased safety, ethereal pneumonia, bronchitis, anesthetic shock, post operative nephritis and anesthetic collapse being almost entirely obviated.

Of late years following the general custom I have not used this modified closed method for prolonged cases, but I always use it for short ones and frequently do so in order to produce a quick induction of the anesthesia. Even when using the drop method, if the patient does not seem to yield to the ether readily I place above the mask a towel rung out of hot water and obtain thereby a better anesthesia.

Intratracheal administration of warm ether under positive pressure is a new method; it seems to give very good results and it is indicated in all thoracic operations. The patient is put to sleep by the ordinary method and then the warm vapor is pumped through a tube which is inserted into the trachea. Time only will show if this refinement of anesthesia is necessary.

Bevan of Chicago in an article in the *Journal of the American Medical Association,* December 2nd, 1911, says that nitrous oxide is the choice for short operations, manipulations and examinations. I hold nevertheless, that warm ether is as good, and, if muscular relaxation is required, it is much better. Bevan states also that nitrous oxide with oxygen is the best method for people with impaired kidneys and those in extremely poor condition, such as patients suffering from peritonitis, typhoid perforation, etc. He holds that in patients who are a good surgical risk ether should be used as the anesthetic of choice. He says he has known of a number of deaths when nitrous oxide was given to patients who had bad heart lesions with poor compensation, and, that too, in cases where in his opinion ether could have been more safely given. Patients who are in such a precarious condition should always be anesthetized by the open method. In the same article Bevan quotes Evarts Graham, saying that ether given for anesthetic purposes reduces the property of the blood for producing phagocytosis, and it accomplishes this on account of its property of dissolving fats. Lecithin, given hypodermically, in a small amount counteracts this inhibitory action of ether, and olive oil given per rectum seems to have a similar effect.

Mikulicz in one hundred operations upon stomachs under local anesthesia with cocaine found more resulting pneumonias than in another series

of 100 done under a general anesthetic. Bevan concludes, therefore, that the post operative lung complications are often autogenous infections.

Spinal anesthesia for certain operations notably prostatectomies in the hands of surgeons very careful of their technic, has been proven to be of value, but this form of anesthesia has a limited field. It is somewhat dangerous, there were nine deaths in the first 1000 cases. Again, the anesthesia thus in use is quite frequently incomplete. The after effects of vomiting, headache and the so-called aseptic meningitis, frequent sequels of spinal anesthesia, are, says Bevan, severe and distressing. Jonnesco's fiasco was a marked argument against its general use. His fifth case, a patient suffering from simple fracture of the patella, died from a moderate dose injected into the mid-lumbar region.

One frequently hears in the discussion upon anesthetics the remark that such and such a one pays no attention to this or that symptom. I believe, however, that the good anesthetist is alert to examine all avenues of information.

If he is going to give nitrous oxide and oxygen he certainly must pay close attention or he will have either a blue patient or one always on the verge of coming out. Color and muscular relaxation are the best guides for the administration of this form of anesthesia. I have used this method for an hour and a half and my attention was constantly taxed to obtain an even anesthesia. If, on the other hand, he is giving the more powerful and common anesthetics he has no right to neglect anything.

I will close this paper by a few quotations from an article on the complications of anesthesia which I read before this Association in November, 1906. I do this because some people seem to think that giving an anesthetic is a very easy and ordinary procedure and not attended with any danger.

"When that thou puttest to sleep, thou shalt take due care and observe with all diligence, the color, the pulse, the breathing, the pupil, and the relaxation of the muscles.

"Thou shalt continually and carefully note the color of the face, more especially the angles of the mouth and nose, the hue of the cheek, the tip of the ears and the finger nails; and, if the color be of a natural fleshy tint or of a pinkish shade, thou knowest that the heart of the patient beateth with strength, and the lungs may pure the blood; but if the color of the cheeks becomes blue, the corners of the mouth a sickly pallor, the lips of a livid hue, the ears pale or the fingers dusky, then cease thou to give the anesthetic, lest the patient pass to that unknown bourne, whence no traveler ever returns.

"Ever and alway thou shalt observe the beat of the pulse, that it goeth in regular steps as an army on parade, that it linger not too slow, lest its march be a dirge; that it gallop not too quick lest its dance end in death; that it skips not as the lambs on the hillside or become so feeble that the grinding of the heart wane low or the silver cord be loosed. And thy fingers shall be as the fingers of the blind, alert to read the story of the patient's condition, verily shalt thou keep thy brains in the tips of thy fingers, and in the ends of thy fingers shalt thou place watchful sentinels, that shall see danger when it is yet afar off. The learned touch of thy fingers should tell how high is the tension of the crimson tide, for this is the first to ebb, and if the blood fail to reach the sleepless watchman of the breath of life, it may never flow again. When the breathing ceases, soon stops the flagging heart, and, when the stream of blood runs low, the wheel of life no longer turns. This is the most frequent and most pregnant with danger of all the complications of anesthesia. Especially if thou givest chloroform shouldst thou know the vasomotor tone.

"And thou shalt observe the breath of life, how it goes; not quick, nor shallow, nor too slow, as hearkeneth the mariner in the dense fog for warning sounds, so shalt thou listen for signs of danger. Thou shalt be quick to know when the patient forgetteth to breathe; if the memory of breathing be but asleep, or if the centers of respiration be dead from poison. Thou must judge quickly and with inerrant judgment, for the scales of life and death are in thy hands.

"And thou shalt watch the muscles of breathing, if they be set with Titanic strength, the blue lips, the bulging eye, the wide pupil, the blackened face, the fixed chest wall,—all show the spasm which thou must overcome or else the struggle end in death.

"Often the lagging jaw drops back and sometimes a foreign substance as blood or mucus falls into the unprotecting windpipe. Thou must ken such a state at once and by thy own power or with the aid of others remedy it without delay.

"Watch with the eye of the hawk, the pupils of the patient, for they are the windows of the soul, and, when the spirit hath flown, the shutters are wide open. When the vapors of sleep are first inhaled, the frightened sentinels open wide the curtain; but, when the patient is sound asleep, they are drawn to; while, still later, if too much of the poison is inhaled, the windows are open wide, and there is none to answer the call of light. Beware then, the dark and open pupil that is still; 'tis easy for the soul to slip by the drowsy sentinel, and death stands at the open door. Thou alone can bar his entrance.

"Be fearful of the muscle that is lax, the jaw that lags; the arm that makes not protest 'gainst a fall, watch such a one, lest the strength of the man depart forever. Be watchful, and judge aright.

"Watch the heart, for out of it cometh the blood, and in the blood is life; watch the breath, for it giveth life to the blood; watch the color, for it telleth of the depth of the slumber; watch the muscle tension, for it measures the power of life to resist; watch these five things; and, if thou judgest rightly and quickly of their witness, the sleeper shall slumber safely in the keeping, and thou shalt not hear the jeers of the necromancers at thy failure, nor shall the worshipers of that, which in the stream of human progress, is but an eddy, exclaim to these: 'Thy patient is like to Asa the king, as it is written in the Book of Chronicles: "And Asa in the thirty and ninth year of his reign, was diseased in his feet, and his disease was exceedingly great, yet in his disease, he sought not the Lord, but the physician, and Asa slept with his fathers." Let thy patient sleep, but not with his fathers, then shalt thou reap the fruits of thy toil, and eat of the grapes of Esdraelon.'

"And this is the sum of the laws of the anesthetist: When that thou givest an anesthetic, give it as thou wouldst have it given unto thee, that the days of thy patient may be long in the land that the Lord his God hath given him."

THE MANAGEMENT OF CASES OF PULMONARY TUBERCULOSIS; WITH REMARKS ON TREATMENT.*

By R. A. PEERS, M. D., Colfax.

Mr. President, Members of the California Academy of Medicine, and Visitors: It is with no small degree of trepidation that I address you on the subject of tuberculosis. I feel that with the immense amount of interest in this subject which has been stimulated by the studies and writings of others and the vast amount of literature bearing upon the treatment of tuberculous patients, it will be extremely difficult for me to bring before you anything that has not already been said or that can possibly be considered new. I have thought, however, that it would possibly be of interest to you to give in some detail a description of the methods which have afforded me a certain degree of success in the management of these cases. I use the word "management" in preference to "treatment" because at present we have no treatment for tuberculosis. True we have drugs that are of value in the control of certain symptoms and a so-called specific therapy which in some selected cases influences favorably the course of the disease, but nothing that can be called a treatment. The road to success lies in the proper management of the patient's daily life—a regulation of his hours of rest, exercise, diet and entire environment.

To do this successfully requires patience, poise, judgment and knowledge of human nature and a sympathetic understanding of the patient and his disease. First of all, it is necessary that there should be a feeling of confidence and co-operation between the patient and physician. I know of no better way in which this feeling of partnership, I may call it, can be promoted than by explaining as nearly as possible to the patient the nature of tuberculosis, the methods by which it is spread, the reason for the symptoms that appear and the reason for every step that is taken to procure an arrest of the disease. Personally, I explain what the tubercle bacillus is, its microscopic size, the way in which it gains entrance to the human body and the reasons why it retains its foothold and causes disease. As often as possible I show him the tubercle bacillus under the microscope and when time permits I show and explain to him the methods of staining. This requires much time but it brings before the patient a living enemy, something visible, something real, instead of leaving him with an extremely indifferent idea of some mysterious and dreadful plague from which there is no escape. Incidentally it teaches care in the disposal of every particle of sputum and also perhaps helps implant the idea that, whatever may be the effect of mind over matter, there is more than "the mental error" of certain pseudo-scientific religionists to deal with.

The next step is to explain the reasons why the patient must follow certain rules regarding rest, exercise, diet, sleeping out, etc. There is absolutely nothing the patient is asked to do for which there is not a good reason and that reason is given the patient either when the order is given or upon request. The reasons why a patient must stay in bed until the temperature becomes normal and the necessary steps to take to keep warm out of doors in winter time are given special attention. In no other way would it be possible to keep patients in bed, without murmuring, for many months at a time. In no other way would it be possible to keep them cheerful during the many discouragements due to continued fever, to exacerbations, attacks of pleurisy, hemorrhages, and the like. The reasons for these exacerbations, attacks of pleurisy and hemorrhages, are explained and the patient is warned in advance of their probable occurrence and is told what to do when they occur and why. This prevents unnecessary alarm in case of a hemorrhage and prevents despondency over the occurrence of an exacerbation. In addition each patient is supplied with a small book called a "Tuberculosis Primer" in which these instructions and explanations are elaborated on.

Also each patient is provided with a record book in which is kept a daily record of the presence or absence of: Headache, pain in the limbs, pain in joints, malaise, giddiness, faintness, fatigue, nervousness, restlessness, insomnia, sleepiness, indigestion, nausea, vomiting, stimulation, fever blisters, rash, enlarged glands, whether there is oppression in the chest, increase or decrease of cough or expectoration, the presence of pleurisy, or of blood in the sputum, the condition of the appetite, the number of eggs and quantity of milk taken, the hours of rest and exercise, the number of bowel movements, the occurrence of menstruation, and the temperature at 7, 10, 2, 4 and 8. There are also spaces for the pulse rate and weight, and blank spaces in which can be jotted down any other points of interest. If the patient is receiving tuberculin or vaccines the size of the dose is noted in a place reserved for the purpose and the patient keeps a record of any pain, soreness on pressure, redness or swelling at the point of injection. Each item is checked up daily and any change in the patient's condition quickly noted.

This training is valuable not only in securing the co-operation and confidence of the patient, and as an aid to the physician, but is of great value to the patient after he leaves an institution and goes home where he is not under medical supervision. By carefully noting the temperature and other symptoms for months and having their significance explained to him he very quickly recognizes symptoms of a recurrence and can thus take early the necessary steps to prevent a relapse to his former condition.

I do not think it possible to lay too much stress on the importance of what has been said on the education of the patient. I am speaking now merely as it affects the patient's own welfare. The influence upon the patient's family and the part education plays in the prevention of the spread of tuberculosis are not at present under discussion. This is a disease where patients very frequently are compelled to stay in bed for months,

* Read before the California Academy of Medicine, Dec. 18, 1911.

to deny themselves in many ways, to be in a way exiled; and, if we are to carry our patients over this period, it is necessary to have their full co-operation. The time has gone by when one can say to the patient "Do this or do that. Do not ask why but do it because I tell you it is good for you." The patient must and should know *why*. Personally I invite questions. I inform the patient he will be asked to do nothing for which there is not a good reason and that I will be glad to explain everything in detail.

I now wish to outline my plan of treatment and to express my opinion as to the value of the various measures which contribute to successful results in these cases. I may make some statements which are at variance with some of the accepted theories and I shall be pleased to state my reasons therefor and to have the freest criticism.

First, I believe that the most important thing in the care of tuberculous patients is rest. I believe it to be more important than fresh air. The greatest predisposing factor in the development of tuberculosis is overwork, overplay, or a combination of both. A tuberculous patient with a temperature must be sent to bed and kept there until the temperature is normal even if it takes months. He must have rest of mind and body. When the temperature returns to normal he must be allowed up gradually, commencing with an hour a day until most of the day can be spent out of bed. If, after being up, the temperature goes to 99.6° he must go to bed again. If it goes to 100° he must stay in bed until it is normal. The patient with a normal temperature should rest before and after meals and should spend at least 12 out of 24 hours in bed. If the pulse is very rapid it is only another indication for rest, as is the occurrence of a cold or an exacerbation. There is absolutely no other one thing yet discovered that has the marked beneficial effect upon the fever, pulse, appetite, night sweats and loss of weight as rest. This explains more than any other thing why patients do better in an institution than at home. What mother or other person can secure the rest at home, where household and business responsibilities are ever present, that can be obtained in an institution where these cares are absent? Now I do not want to be misunderstood and have you get the impression that I do not believe in exercise, under proper supervision for suitable cases without fever. The work that Paterson [1] has been doing at Frimley in England and that others are doing in this country shows the good results obtained by causing certain patients to do work under careful supervision. But these patients are, to quote Paterson, "not admitted directly to the sanatorium, but are selected from the patients of the Brompton Hospital." Moreover Paterson puts his febrile patients to bed. He says: "The next point for consideration is the temperature, which is taken by mouth. Should this be, or have been, 99° F. or over during the week preceding admission to the sanatorium, the patient is put to bed after the journey. So long as the temperature remains at 99°, in the case of men, or 99.6° in the case of women, the patient is not allowed up for any purpose. . . . I consider that if a patient with few signs of disease, when absolutely at rest in bed, still has temperature of 99°, active disease is present. . . . After the temperature has been normal for a week or ten days the patient is allowed up for dinner, but returns to bed as soon as the meal is finished. . . . Patients with apparently limited disease, but who are in poor general condition and without fever, are allowed to be up all day, but are not permitted to take further exercise than is entailed by walking to and from the dining hall for their meals. The remainder of the day is spent resting, and work entailing no physical exertion is allowed, with the sole object of occupying their minds." His final remarks are, "to remember the importance of the temperature of 99° F."

FRESH AIR.

The value of fresh air for tuberculous patients has for many years been recognized by profession and laity alike. Perhaps the pioneer of the modern fresh air crusade for tuberculous patients was Dr. George Bodington [2] of Sutton Coldfield who in 1840 advocated fresh air day and night for these cases. In a paper published at that time he showed that patients not only did not suffer because of cold fresh air but actually improved because of it. His ideas were so radical and so opposed to the prevalent ideas regarding tuberculosis that he was ridiculed and persecuted and finally, his patients having been driven from his sanatorium, he turned his institution into an asylum for the insane. Later Brehmer in Germany, Trudeau and others in this country, proved by experience the truth of Bodington's contention. To-day no one denies the efficacy of the fresh air treatment. It is one of the strange features of the practice of medicine that often what is recognized as of undoubted value is insisted upon very faint-heartedly. Patients are frequently told to have plenty of fresh air but to avoid drafts, and are given no specific instructions how to ventilate the quarters they occupy or how to utilize an already existing porch or to improvise where none exists. Fresh air in tuberculosis is valuable for the same reason as it is valuable in pneumonia, or typhoid fever, in any other disease, or in health. It is valuable because it is fresh—that is, free from impurities; because it is stimulating and offers its constituents uncontaminated. It is better than house air the same as certified milk is better than the common so-called "garden variety." And just one word about drafts. They are overestimated. They may frighten some, like ghosts frighten the superstitious, but one is no more dangerous than the other. Keep your patient warm and he need have no fear of drafts.

And while we are on the subject of fresh air we may as well consider climate. For centuries, even back into antiquity, climate and the pine woods have been considered essential to treatment. Climate is not an essential. I do not deny that it is an important factor. A patient in a clear buoyant atmosphere without doubt feels better

than he does where there is fog, just the same as he feels better when his porch commands a view of fine mountain scenery rather than a back alley filled with garbage cans and refuse. The desirable features of a good climate are that the air be free from impurities, that there be plenty of sunshine, and that the patient can live out-of-doors without discomfort. Lawrason Brown [3] says: "A change from a good climate to a bad climate is often beneficial," and there is no doubt that many of the good results obtained by sending patients away are due not to the climate but to change of climate.

ALTITUDE.

On the subject of altitude there seems reason for the belief that tuberculous patients do better at altitudes above 2000 feet than at sea-level. Webb [4] of Colorado Springs and Bullock of New Mexico and others have shown that the percentage of lymphocytes increases quite materially, commencing as early as two weeks, in patients leaving sea-level and going to places of greater altitude. This they have shown by very thorough experimentation and carefully compiled tables.[4] They believe that the lymphocytes possess a ferment of lipolytic power capable of splitting wax and fat into glycerin and fatty acids. As the tubercle bacillus contains 30% by body weight of waxy substances and as many observers think the chronicity of tuberculosis due to a great extent to the difficulty experienced by the defensive mechanism of the body to destroy these waxy substances, the influence of an increase in lymphocytes is obvious. Webb and Williams [4] mention the case of a man treated by injections of living virulent tubercle bacilli, commencing with one and increasing to 1200, where the patient showed remarkable improvement and at the same time an increasing percentage of lymphocytes. They also show by their tables that this increase is noticeable in improving cases, less noticeable in stationary cases, and absent in retrograding patients. They also present some interesting case reports showing improvement in their cases treated so as to artificially stimulate the production of lymphocytes.[5] Turban at Davos, in Switzerland, and many others in Colorado and other places with an altitude of several thousand feet, have called attention to the freedom from tuberculosis among the natives of mountain regions. My own experience at Colfax, an altitude of 2400 feet, is interesting. In the twelve years I have resided at Colfax there has been but one death from tuberculosis among those who have lived there for five years and that was a young girl, a sister to a young man who had died from a psoas abscess several years previously. Just what part altitude and the corresponding lymphocytosis plays in this apparent freedom from tuberculosis is a very interesting problem. I think though that the inference that there is some relation is not without good ground.

DIET.

Of very great importance in the management of tuberculous patients is the question of diet. One of the striking, often one of the first, symptoms of tuberculous patients is a loss of weight, sometimes apparently out of proportion to the disease. This is due to several factors. First, the toxins undoubtedly exert a direct destructive action on the body cells; second, there is increased metabolism because of temperature; third, there is probably a much greater loss from exercise, because of the toxemia, than would occur from a similar amount of muscular movement in healthy individuals; fourth, there is a decreased appetite because of the toxemia; fifth, there is poor digestion and assimilation because the digestive apparatus is both starved and poisoned. The indications, then, are to stop the waste by limiting the loss from toxemia, pyrexia, and exercise, and to feed the body. The first indication is met by rest; the second by proper dieting. Here no fixed rule can be followed. The two prime essentials of diet are that there be enough food to repair tissue waste and maintain energy.[6] For the first, protein is absolutely necessary. For the second, fats or carbohydrates are almost equally essential.[6] It should be the endeavor to feed patients who are below normal weight so that there will be a steady gain—with an ideal of about two pounds per week. Febrile patients very frequently can be fed the same foods as afebrile patients. Perhaps the best foods for routine feeding are milk and eggs. There is no distinctive virtue in milk and eggs other than they are easily taken for a long period of time, have a good caloric value, and do not overtax the digestive system. Breakfast bacon is also of high caloric value and not indigestible. Bread, butter and sugar are all of value. A pound of good bread has nearly the same caloric value as beef tenderloin; a pound of sugar is nearly equal to one and one-half pounds of steak; and butter is twice as good as sugar. Patients who tire of milk and eggs will frequently do well on bread and butter with sugar. A diet recommended by Walsh [7] of Philadelphia has proven very efficacious in several of my cases who otherwise failed to gain. This consists of giving the patient one meal each day, breakfast, lunch or dinner as preferred, and in addition 3 quarts of milk and 6 eggs.

There has probably been in the past too much overfeeding but I think to-day this is pretty much corrected. The main thing to be borne in mind is that any diet of good food, properly cooked, that does not overtax the patient's digestive system, is the proper diet if the patient gains in weight. Again I would like to impress the fact that rest in bed increases the appetite, aids digestion, and does not weaken the patient.

After normal weight is attained merely sufficient food to keep the body weight at normal is required. Too often the mistake is made of trying to get too much weight and if such occurs the patient must be instructed how to reduce safely. As a concluding word on diet I will merely mention an interesting historical fact: viz., milk and eggs were strongly recommended for consumptives by Aretaeus the Cappadocian in the second century.[7]

DRUGS.

The exhibition of drugs in cases of tuberculosis is disappointing in so far as curative effects are concerned. Perhaps the most highly lauded of recent drugs has been mercury. I have used it in quite a number of cases but have seen no beneficial effects that can be ascribed to its use except in one case where its effect was as magic. This was in a case where the wife of the patient, who was on a visit to Colfax, consulted me because of symptoms which to me were strongly suggestive of lues. Without waiting for a Wassermann test, which was afterward made with positive results, I put the patient on mercury with the aforementioned brilliant results. Arsenic and its derivatives, of which atoxyl is a good representative, have also been much used, sometimes abused, much lauded and again much condemned. It must not be forgotten that arsenic is arsenic, however used, and in whatever form and if unwisely used there will be toxic effects. On the other hand there can be no doubt of the tonic effect of arsenic, and the experience of competent observers, such as M. Rothschild, who have used it in a great many cases proves its value. Creosote in some of its less irritant forms is said by some competent men to have a marked beneficial effect on tuberculous patients. Personally I practically never use it. Emulsions and predigested foods I never use. They are merely expensive, oftentimes nausating foods which render the patient poorer and the manufacturer richer.

However, I do use laxatives and purgatives where necessary, codein or heroin, in small doses at bedtime, if the patient has a troublesome nonproductive night cough, morphine and nitrites for hemorrhage, and other drugs as needed to meet special conditions.

TUBERCULIN.

The use of the drug tuberculin is one on which the profession is divided, although of late it seems that tuberculin is steadily gaining followers. There has probably been no drug the use of which has been more abused, and the fault has not been always on the side of the drug. The men most experienced in its use, who use it according to proper rules and with a due respect for its potency, are the ones who speak most highly of it. Those who use it less frequently, with no regard to temperature, without keeping the patient under supervision and without any regard for or knowledge of the occurrence of reaction, are the ones who will see the least benefit and the ones who will most probably condemn its use. I have known many cases where tuberculin has been given and where the temperature has never been taken except in the doctor's office at the time of injection. That method is not a fair test of tuberculin and is extremely dangerous to the patient. I have known cases who have been given tuberculin when the patient has traveled many miles to the doctor's office, waited his turn, received his injection, and traveled home many miles the same day. That is not using tuberculin scientifically: it is either plain ignorance or robbery. I have seen cases where a patient is allowed up with a temperature of 102° F., or has been kept in a room without proper ventilation, and given tuberculin, a bottle of cough syrup, and a tonic; and because the patient fails to improve the tuberculin treatment gets the blame. I have seen tuberculin used and its use continued in spite of reactions and in spite of every contraindication to its use. These are some of the things which cause men to discard tuberculin and to deny its value. Personally I have used tuberculin for several years and have given thousands of injections and will continue to use it until I find something I consider better. Also I would want to receive the benefit of its use if I personally had tuberculosis. But I should want some one to administer it who was skilled in its use, I should wish a normal temperature, and should want to be under constant supervision.

There are a great many varieties of tuberculin and many are probably of equal value. I am beginning to believe that probably we will obtain better results from the use of the entire body of the bacillus in a form similar to the use of ordinary vaccines (of course ordinary tuberculins act in a manner similar to vaccines), or in the form of living bacilli. Webb of Colorado has for some time been using injections of living virulent tubercle bacilli, not only to produce immunity, but also as a therapeutic means. As yet it is too early to pass judgment on this method, although in the hands of a careful man like Webb there have been no bad results.

In summing up my remarks on tuberculin I would offer the following:

1. Tuberculin is of undoubted value. The principal proof of this is that those who use it the most are satisfied of its value. On the other hand, tuberculin does not cure tuberculosis.

2. It probably does not make so much difference what particular make of tuberculin you use, providing you get a product manufactured by a reputable firm. The principal thing is how it is used. In other words, it is not the preparation but the manner of using.

3. Tuberculin should not be used by the inexperienced, who have only a text book knowledge of the drug, any more than a capital operation should be performed by anyone who has merely a text book knowledge of surgery.

4. Tuberculin should not be used in febrile cases, where the temperature exceeds 100°, except in extremely minute doses.

5. The ordinary stock dilutions 1, 2, 3, 4, 5, should be supplemented by much weaker dilutions. No. 1, which contains .01 mg. per c. c., is too potent for commencement.

6. Tuberculin should not be measured as so many minims of a given dilution; it should be given with a special syringe graduated to 1-100 of a c. c., and the dose calculated in fractions of a mg.

7. Patients should not be given tuberculin who do not keep an accurate daily record of their symptoms and where they can not be given careful personal supervision, preferably daily.

8. Patients should not be given tuberculin where they have to come miles by train to receive the dosage, or where they are engaged in laborious undertakings.

9. Much of the benefit from tuberculin administration lies in the fact that such patients are under daily supervision and are thus seen more frequently and more carefully managed than those who do not take tuberculin. In addition tuberculin is given over a long period of time, thus insuring the continuance of supervision over a correspondingly extended period.

10. It is not fair to lay at the door of tuberculin all the accidents that occur while the patient is under treatment, or to ascribe all the benefits during its use to other factors. Nor is it fair to ascribe all the benefit to tuberculin and to blame the reactions to other causes.

11. It is best in giving tuberculin to avoid even moderate reactions. These will undoubtedly sometimes occur even under most careful treatment. If disregarded disaster will follow. On the other hand, patients will sometimes make more rapid recovery after a pronounced reaction than at any previous time.

12. In giving tuberculin, if in doubt as to the advisability of increasing the dose—don't increase.

VACCINES.

Judged by the successful use of vaccines in other diseases, it seemed reasonable to hope that vaccines made from bacteria commonly found in the sputum of tuberculous patients or from bacteria isolated from the patients' own sputum (autogenous vaccines) should offer hope of considerable therapeutic value. That this method of treatment was foreseen several centuries ago is shown by Allen,[8] who says that Dr. Robert Flood in 1638 advised sputum injections as a cure for phthisis. Allen,[8] himself treated patients by use of a vaccine made by obtaining the bacteria from the patient's sputum, together with the leukocytes and other constituents, although I can not state with what success. Time will not permit a review of the work of different observers, but the results would indicate that a not inconsiderable proportion of cases are benefited by the use of vaccines. I think no one will dispute the statement that autogenous vaccines are much to be preferred to stock vaccines.

My own work has been entirely with autogenous vaccines, which are prepared for me by the Cutter Laboratory. I commenced using vaccines about two and one-half years ago and my first experiments included about twenty cases. These were all advanced and very advanced cases and with hardly any exception were cases which failed to improve under ordinary treatment, or were stationary. Most of them were distinctly discouraging cases. Of these only two showed any benefit. One was a patient under ordinary treatment, with the addition of tuberculin after the temperature had dropped to normal. When first seen, June 25, 1909, she was a very advanced case with temperature, night sweats and great emaciation. Moist rales could be heard over almost the entire area of both lungs. There was also a large cavity in the left upper lobe. In fact, the patient's outlook was so apparently hopeless that I felt no benefit could be gained from treatment, and suggested to her family the advisability of taking her home. However, they were extremely anxious to do everything possible and she was admitted. After three months in bed the temperature became normal, the patient had gained five pounds in weight and was feeling much improved. In February, eight months after admission, temperature was still normal, she had gained 25 pounds in weight, and the moist rales had mostly disappeared from the right side and were not nearly so marked on the left. She still was troubled by a very annoying cough and by a very profuse expectoration, which possessed an extremely offensive odor. This odor was so offensive that it was very trying for the patient and for the family. At this time, February, 1910, I had an autogenous vaccine made which contained staphylococcus pyogenes aureus and albus and streptococcus. The initial dose was 50 millions of each strain of straphylococcus and 10 millions of streptococcus. This was increased at five-day intervals—lengthened to ten days—until the patient was taking 2000 millions staphylococci and 250 millions streptococci. The effect of these doses was to eliminate the cough so that the patient slept all night without waking, something before unknown, and to cause the sputum to almost entirely lose its offensive odor. In fact, she felt so well that against advice she returned home in April and discontinued the vaccine. After a few months the old condition returned and the patient died 13 months after her return home. While it is impossible to state what the result would have been had she continued under treatment at Colfax, I have always felt that the improvement would have continued. The other case that resulted favorably was an advanced case with involvement on both sides and offered a distinctly unfavorable prognosis. This patient, after several months in bed, continued to suffer from a most distressing cough, with profuse expectoration and an afternoon temperature of 99.6° to 100°. The vaccine in this case was one of streptococcus and pneumococcus. The initial dose was 10 millions of each. Because of the temperature the dose was not increased above 100 millions and the improvement, while slight, was not satisfactory. The dose was then increased gradually until the patient was taking about 750 millions. During this time the patient steadily improved, and at last reports, about 18 months after commencement of treatment, is well enough to attend to a great many of her household duties.

Looking back over my past experience I have concluded that perhaps some of the cases failed to gain because of insufficient dosage. The two cases that did improve were the only ones where very large doses were attained. Recently I have again commenced the use of vaccines and have now under observation seven cases. These are all very advanced and cases offering a distinctly unfavorable prognosis. It is too early as yet to report on these cases, but the results so far obtained

are much more favorable than formerly. I am using progressively larger doses, paying far less regard to temperature than in my earlier experiments. One of these patients is an extremely interesting case. She had been in bed praceically the entire time for eleven months up to September 25th of this year, when she received her initial dose. During the entire eleven months she had a temperature that was below 100° only a few days at a time, and very frequently reached an afternoon temperature of 102°. The vaccine in this case was composed of streptococcus, staph. albus, and m. catarrhalis. The initial dose was 10, 50, 50 millions. Injections were given September 25, 30, October 6, 14, 19, 24, 30, November 4, 9 and 25, when the dose had been increased to 300 streptococci and 1000 staphylococci and 1000 m. catarrhalis. On November 25th the supply of vaccine was exhausted. Dec. 6th a new supply was obtained and a dose of 100, 500, 500 given. The only improvement the patient has ever shown has been since commencing the vaccine. The temperature has gradually dropped until for the past forty days (December 10th), the patient has been up every day and for the past ten days has taken short walks. While it is too early to predict the outcome, the case is certainly extremely satisfactory. The other cases have been placed on treatment during the past six weeks and it is impossible to report on them at this time. I am, however, encouraged to continue their use and to extend the treatment to more favorable subjects. I think I have learned that the benefit, if any, is to be derived from large doses.

There are two other phases of this matter of the management of these cases that I wish to touch on slightly. The first is the matter of examination. I think that as a rule patients are examined too frequently. If a patient is examined thoroughly, it is a considerable strain, and if the examination is not thorough, it is useless. Many patients suffer from rise of temperature, increased cough and expectoration, slight attacks of pleurisy and even blood-streaked sputum following the ordeal of examination. Besides, there is always a considerable variance in the physical signs at different examinations, often much more than the patient's record and general symptoms show. To satisfy my mind on this point I have taken certain patients and examined them weekly over quite a period of time, noting the character and location of rales at the different examinations, and have been surprised at the marked variation. In addition, frequent examinations are not necessary. If patients are doing well the record will show it in the drop in temperature, the diminished cough and expectoration, the increased weight and appetite and other symptoms. If the patient is not progressing favorably the record will record it just as faithfully. I frequently do not examine patients who are doing well for months at a time. On the other hand, in case of increase in shortness of breath, and increased rapidity of pulse, I will frequently go over a chest to detect any collection of fluid or the occurrence of other measures calling for relief. Otherwise I follow the record.

The other matter I wish to speak of, in closing, is the element of time. Patients do not get an arrest in days or weeks, but in months. They do not attain a cure in weeks or months, but in years. They will be subject to good spells and bad spells, irrespective of treatment. In spite of the best management they will have bad spells, or exacerbations, and in spite of the greatest carelessness and mismanagement they will have good spells. We must not misinterpret these good spells as the result of any particular line of treatment, nor the bad spells as due to neglect to follow instructions. The results of our management of these cases can be judged merely by the course of months and years.

Discussion.

Major Brooke, U. S. A.: I heartily endorse all that has been said to-night, and there is very little that I might add. My experience in the treatment of tuberculosis has been largely confined to the care of patients in sanatoria, and I think it is undoubtedly the duty of the physician to strongly urge on patients, where it is practicable, to enter a sanatorium. This is desirable, not only on account of the superior results obtained, but also on account of the educational advantages present in these institutions. Most patients admitted to a sanatorium in a short time quickly learn what to do and what not to do, and quite a number of them who are not able to remain in the sanatorium long enough to become cured learn how to take proper care of themselves if discharged before the disease is arrested. It takes years and months to effect a cure. When these patients leave the sanatorium and enter civil life they have learned how to live, which is so essential, not only for their future welfare, but for the health of the general public. I think it is a well-recognized fact that patients who acquire tuberculosis in unfavorable surroundings, who are overworked and underfed, respond readily and quite rapidly to treatment, provided we can improve their environment, their mode of life, and see that they get the proper food, fresh air and necessary rest. Patients in better circumstances who receive the proper amount of food and live in hygienic surroundings are much more difficult to treat; they do not respond so readily. Of the general measures used in the treatment of tuberculosis in sanatoria, I think the most important is rest. Very few cases get well and progress without rest. It is of the greatest importance to the majority, especially those who have any temperature. With patients who are nervous and irritable, it is very difficult to make them understand the importance of absolute rest and carry out proper rest treatment. With most of the patients, when it is fully explained to them the necessity of plenty of fresh air, there is usually not much difficulty in carrying out this measure. Another important measure is the amount of food to prescribe for the patient. In some cases the patients eat too much; stuffing or forced feeding may do harm and upset the digestion; an excessive amount of fat also does more harm then good. I do not mean to say that quite a large amount of food is not necessary or essential, but I simply want to emphasize the point that it is unnecessary to over feed patients. In most cases the diet should be formed of fresh meat, eggs, milk, potato, rice, etc. I consider that after patients have obtained normal weight, three meals a day are sufficient. With low weight, feeding between meals is absolutely necessary. Another

measure sometimes used in the treatment of tuberculosis is hydrotherapy. I have not had much experience in the use of water other than the ordinary bath. I think with a patient who is able to get around, has no temperature and the weight is normal, that a cold bath, if he reacts well, is advisable. I have had very little experience with the use of tuberculin in tuberculosis. I have never used it as a routine measure; only in special cases. Some cases improve under tuberculin that do not improve with any other treatment. If you use tuberculin, the most important thing is to guard the dose so that you do not get a reaction. I have seen some cases in which so much tuberculin had been given that there were violent reactions and harm done. I think that tuberculin should never be administered unless the patient is in the hospital and you thoroughly understand the preparation you expect to administer. I wish to emphasize once more the importance of rest.

Philip King Brown, M. D.: I do not think it is quite fair to let you go away not knowing a little more about what Dr. Peers has done at Colfax. Those of you who have dealt with the problem of tuberculosis where the expense to the individual is an important consideration, will appreciate, as I have, the wonderful opportunity that Dr. Peers gives to his patients. Dr. Peers furnishes his patients with the ideal type of house, lighted with electricity, partly furnished, exceedingly simple and convenient, and at an extremely low rental. There the patients live, providing themselves with such food as they wish. They buy what milk and eggs they are directed to buy, but they prepare their food as they want it prepared. The cottages are large enough generally for two people, and as a rule a well member of the family accompanies and cares for the patient. This eliminates the trouble present all the time in all sanatoria about nursing and food. Perhaps equally interesting is the fact that the charges for medical services to these patients are more or less uniform and the sum is modest. The doctor sees them once a week or twice a day if necessary, without any change in the monthly rate. This prevents any anxiety on the part of the patient lest he be overdealt with. The difference between patients getting well and not getting well then depends upon what Dr. Peers and Major Brooke have just outlined to you. This is the most interesting experiment for the care of tuberculous patients that I have ever seen.

Regarding the use of tuberculin, I want to say not only of tuberculin but of preparations of arsenic, that it is an exceedingly dangerous thing to draw deductions when the patients use two remedies, particularly tuberculin injected intravenously, which is against all human laws for the use of tuberculin. If you are going to use a remedy you want to eliminate all the doubtful influences. You want to get the patient into a condition that you understand, then use the remedy, and with the change in the patient, such as Dr. Peers has outlined, you are able to draw your deductions. We must be very careful about advocating the use of tuberculin from even an extensive and carefully recorded experience. I often say that half the people with tuberculosis get well without knowing they have had it. A certain number of the rest will die in spite of what you can do for them. A very small percentage are suitable for tuberculin therapy and not all of them profit by it.

It is remarkable what will happen to febrile cases put to bed for the first time. The rapid gain in weight which the laity associate with the idea of cure has been overdone; the laity do not understand that this is only one of the dozen things that should be done in the care of these patients. We have got a problem that is distinctly made up of social as well as medical conditions. We have to measure the nervous reaction and the physical and financial resources of each individual that comes to us before we can advise him how to make his plans. Some individuals with poor care will get well, while others, with the best of care, will not improve. It is pretty hard to draw deductions about these things. I would like to ask Dr. Peers whether he finds hyperthyroidism has an influence in prognosis in pulmonary cases, and in cases with subnormal temperatures and advanced disease is he influenced in any way in the administration of tuberculin?

George H. Evans, M. D.: I was going to say what Dr. Brown has said about the interesting work Dr. Peers is doing, but Dr. Brown got ahead of me, and probably said it better than I could. Dr. Peers is certainly doing interesting work in his colonization scheme. The institutional treatment is the most ideal form of treatment for obtaining results, for only there the necessary constant every-day supervision of the patient can be carried out. Regardless of the treatment the patient is getting, it seems to me one can not expect good results unless constant supervision can be given; it is absolutely useless to see patients once or twice a week and try to treat them scientifically or intelligently. I have given up trying to handle tuberculous patients whom I am obliged to see only once or twice a week, and I do not believe in all the results that are quoted from tuberculin treatment or any other treatment based on irregular intervals of dosage of a week or less and the physician not seeing the patient between those days. Dr. Peers made reference to the interesting work Dr. Paterson is doing at Frimley, England. I had occasion to see that work recently and it certainly is most interesting and it seems to bear out the necessity of intelligent, every-day observation of these patients. Dr. Paterson, by an intelligent correlation of rest and exercise, is able to give what he calls autoinoculations of what he calls antibacterial substances and is able to bring these patients who come in as fever patients, from absolute rest in bed, by graduated exercises to the hardest kind of manual labor. These individuals are gathered from the crowded quarters of the great metropolis of England, most of them from clerkships, where they have demonstrated their inability to stand up under their unhygienic environment and have broken down with tuberculosis. By this method of outdoor living, which starts out with the patient in bed, then sitting up, then being allowed to merely wash the face, then a short walk, then a walk carrying baskets of earth of gradually increasing weight, they are made to understand that they are self supporting, and before they leave they are doing heavy work with pick and shovel. Dr. Paterson demonstrates to these patients the degree of physical labor they can reach after they have broken down in their work and that by getting next to Nature they can live this healthy out-of-door life of hard physical manual labor. Dr. Paterson stated that a large percentage of these people after having demonstrated their ability to do this labor return to their clerkships, then break down again with tuberculosis and die. It seems to me that this is a proper place to emphasize that society should take hold of this problem better than it has been doing and provide a convalescent farm where these patients can be taken after they have been dismissed from the institutions and clinics, and there be allowed to be employed in agricultural pursuits, the only environment that many of these people are capable of living in. I was much interested in Dr. Peers' statement regarding his treatment with autogenous vaccines. This brings up the moot question of mixed infection. I am very much interested in the results that he has obtained. My own results are not so good, for I have been much impressed by the fact that where the technic of washing tuberculous sputa has been most carefully carried out,

the evidence of mixed infection in the living is of exceptional occurrence. At least this is the result of my own personal experience.

Dr. Peers, closing discussion: I tried to outline as near as possible the plan I am following at Colfax. I would like to emphasize some of the points even more than the doctors who have discussed the paper, although they have emphasized pretty much the points that I wished to have emphasized. There is a point which Major Brooke brought up. While it has nothing to do with the treatment of these cases, it is a very interesting one; that is, that those patients who have been surrounded with the poorer conditions, poorly housed and overworked, who go to a place where these things are properly arranged for them, will make a wonderful improvement; whereas, if you get patients developing tuberculosis under ideal conditions, there is not enough change when they are taken out of their homes and sent to an institution, and there is not the same great amount of improvement. Major Brooke and Dr. Brown brought up the question of weight. A gain in weight is not an absolutely sure sign of improvement of the patient; but in most cases it is a sign of improvement. The most important thing pointing to improvement is a permanent drop in temperature. I would place the gain in weight as coming second to drop in temperature. Regarding tuberculin; at one time I tried tuberculin on all patients. Then for two years I did not use tuberculin except in those cases that were absolutely afebrile. I am opposed to the use of tuberculin in febrile cases except in the most minute doses—not more than .00001 mg., which, of course, is very small. Dr. Brown asked what to do with patients with subnormal temperature and what influence hyperthyroidism has on these cases. In regard to the question what to do with cases of habitual subnormal temperature: if the subnormal temperature is the only untoward symptom or the only thing noticeable, I pay no attention to it; if accompanied by other symptoms which are bad, I conclude that it is a sign of toxemia. In regard to the hyperthyroidism, I have not had much experience with it. A few women have come to me with enlarged thyroids, but I do not know that it has any particular bearing on the case. I had one case of exophthalmic goiter that had been operated upon and sent to me by Dr. Porter of Oakland; the patient was a very tall, thin women, of 84 pounds; she was the thinnest woman I ever saw. Her condition precluded a radical operation at the time. Under treatment she gained 50 pounds, and gained in every other way. After a few months the thyroid began to enlarge again and give trouble; so she was sent by Dr. Porter to Rochester and the Mayos removed the thyroid. Since then she has been getting along splendidly. If I had patients whose symptoms I thought were due to the thyroid condition, I would send them to a surgeon and let them have the benefit of surgical treatment. Dr. Evans spoke of the relapse of cases cured at Frimley; cure is a bad word. I do not believe that Dr. Paterson is right if he says there is no such thing as cure. To-day I saw a medical student at Cooper Medical College, who came to me five years ago. At that time he weighed 111 pounds; there was involvement of both sides, a cavity in the left apex, very rapid pulse, which some one told him was due to a poor heart; he stayed ten months. That was five years ago, and now after four years that boy has never coughed, has had no temperature, is doing college work, studying medicine, and he has now no symptoms whatever of tuberculosis. He now weighs 145 pounds. Perhaps it is not right to say to that patient "you are cured," but I think that we have pretty good evidence of a cure. As ordinarily used the word cure is poor. Dr. Gibbons spoke of Dr. Paterson giving his patients absolute rest; I could enforce that if I had sufficient help. It is the only things for patients with temperature, and they should have as much rest as patients with typhoid. I have not enough help to do that, but I am a firm believer in rest; absolute rest is ideal.

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THE CHEMISTRY OF PREPARING SALVARSAN FOR INJECTION AND A SIMPLE, RAPID METHOD FOR ITS PREPARATION.

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The chemistry involved in preparing Salvarsan ("606") for injection has been little dealt with, though considering the great importance this therapeutic agent has gained in medicine, a knowledge of what takes place in the different stages of preparing the injection and that which is finally administered, should be considered an important adjunct to a thorough knowledge of the substance being employed.

Inasmuch as the preparation of Salvarsan for injection is an important factor associated with its use, this article is presented in the hope that the practitioner, upon whom is dependent the administration of Salvarsan, may benefit by gaining a more complete knowledge of the substance he is employing and by the acquisition of a more simple and rapid

method than has heretofore been used for the preparation of "606" for injection.

The following will demonstrate in an explicit and simple manner both the qualitative and quantitative chemistry involved in the principal methods in vogue. Having had the opportunity of preparing a large number of injections, these theoretical calculations have been put to a practical test and from these tests has been deduced the new simple method, which will subsequently be described.

Salvarsan is the bi-hydrochloride of the base, dioxy-diamido-arseno-benzol. Its chemical formula may be written several ways, the two most common are:

Its empirical formula being: $As_2 C_{12} (OH)_2 (NH_2HCl)_2$.

The base of "606," dioxy-diamido-arseno-benzol, is a very unstable compound, necessitating the marketing of its bi-hydrochloride preparation which is more stable.

Salvarsan is an organic arsenic compound of the closed chain or aromatic benzol series. Calculated from its molecular weight, it contains 34.246% of arsenic. It possesses both weak acid and basic properties which permit it to unite with acids of alkali to form salts. In hot water it is readily soluble and on coming in contact with water, hydrolyses with the liberation of hydrochloric acid (HCl). Aqueous solutions of "606" are therefore of very acid character and not suitable for injection on account of causing pain and its dangerous systemic action.

The principal methods employed for the preparation of the injection are to either convert the by-hydrochloride (606) into a soluble sodium salt or the precipitation of the base from the bi-hydrochloride or the soluble sodium salt. To accomplish the formation of the soluble sodium salt, an eqeous solution of Salvarsan is treated with a quantity of sodium hydroxide (NaOH) that will neutralize the hydrochloric acid radical of "606" and combine with its base to form the sodium salt. A neutral suspension of the insoluble base is formed by treating a solution of Salvarsan with a quantity of sodium hydroxide (NaOH) just sufficient to neutralize the HCl only, or else the sodium salt may be first formed as described and the base precipitated from this by the addition of an acid, glacial acetic acid being usually used. However, this last mentioned method has become obsolete.

The chemical reaction involved in obtaining the above preparations and the quantitative relationship which exists between the various substances is as follows:

The usual technic employed is to first dissolve the "606" in hot water and the base then precipitated out by adding a part of the required amount of NaOH. The addition of NaOH is then continued until the mixture becomes clear. The clearing of the mixture is the end point and indicates that the insoluble base first formed has been completely converted to the soluble sodium salt. The solution at this point is of slight alkaline reaction. This preparation if injected intramuscularly is diluted to about 20 cc. and if to be given intravenously it is further diluted to 100 to 250 cc. with normal salt solution.

1. Preparation of the soluble sodium salt.

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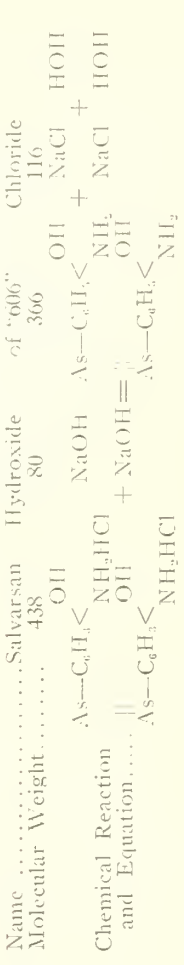
2. Preparation of suspension of the neutral base.


Name ..... Salvarsan Sodium Hydroxide Insoluble Base of "606" Sodium Chloride Water
Molecular Weight 438 80 366 116
Chemical Reaction and Equation ..... NaOH NaCl HOH

The technic for this preparation is to first dissolve the "606" in hot water and then NaOH added until the mixture is neutral, the neutral point being determined with litmus paper. At the neutral point is indicated that all of the $(HCl)_2$ radical of "606" has been neutralized, causing the neutral base to be thrown out as an insoluble precipitate. This suspension is made up to about 20 cc. with water before injecting intramuscularly.

The calculations arrived at in the above reaction are that 438 gm. of "606," to be converted to its insoluble base, requires 80 gm. of NaOH and yields 366 gm. of the base and 116 gm. of sodium chloride as a by-product. Calculating further we obtain the following:

.1 gm. of "606" requires .018 gm. of NaOH and .6 gm. of "606," .108 gm. of NaOH to neutralize its $(HCl)_2$ radical.

.1 gm. of "606" will yield .083 gm. and .6 gm. of "606," .498 gm. of its insoluble base.

.1 gm. of "606" will yield .026 gm. and .6 gm. of "606," .156 gm. of NaCl as a product.

Therefore, in order to precipitate the base from "606" by adding just sufficient NaOH to neutralize its HCl only, each .1 gm. of "606" requires .018 gm. of NaOH and the resultant suspension for injection will contain .083 gm. of the insoluble neutral base and .026 of sodium chloride (NaCl). It will be noted that the same quantity of NaCl is formed as was obtained in the preparation of the soluble sodium salt and that just half the quantity of NaOH is required.

The detailed technic of the various methods in use for preparing the injection has been omitted on account of the great number which already exist, though all being based upon the two principal methods, the principles of which have been dealt with in the foregoing. The multitude of methods has only added to the confusion which had already existed at the beginning, this being chiefly due to the intricate technic which all of the so-called modifications possessed and the considerable amount of time which each required in making the preparation. The most common methods employed at the present time require such special technic and skill that the practitioner often hesitates to undertake to prepare the injection and, as is often the case, calls upon someone who is trained in making these particular preparations. In consideration of the fact that a more simple and rapid method that will give the most efficient results obtainable would be of great advantage to the average user of "606," the following new method is presented.

Whatever may be the desired mode of injection, that which is aimed at in the preparation of "606" for injection is to form either a solution of the soluble sodium salt or a suspension of the precipitated neutral base. From the foregoing calculations has been deduced that whether the alkaline solution or neutral suspension is to be made, the "606" requires a specific and definite amount of sodium hydroxide (NaOH) to form the required compound for each individual case. By referring to the calculations we find that each .1 gm. of "606" requires .036 gm. of NaOH to be converted into the soluble sodium salt and that just half this quantity of NaOH, namely, .018 gm. is required to form the insoluble neutral base. These facts, practically applied, permit the preparation and use of a standard solution of NaOH, that is, a solution a definite quantity of which shall represent an amount of NaOH that is specific for another definite quantity of "606" to form the required preparation. The strength of this standard solution of NaOH that has been found most practical is one of 3.6% or 36 gms. of NaOH in enough distilled water to make one liter. One cc. of this solution represents .036 gm. of NaOH and one-half cc., .018 gm. Therefore, if it be desired to form the alkaline solution, all that is necessary is to add for each .1 gm. of "606" used, 1 cc. of the standard solution of NaOH and if the neutral suspension is to be formed, .5 cc. of the solution is added to each .1 gm. of "606" employed. It is evident then that the use of the standard solution offers a method that is accurate, simple and rapid and giving most efficient results, whereas, in the older methods, no matter what technic was employed, a positive proof of the result derived could never be truly ascertained on account of the indefi-

nite quantities of NaOH added and the danger of adding either too little or too much of the NaOH was ever present.

The detailed technic of the new method, which in the hands of the author has given very satisfactory results in the preparation of a large number of doses, is as follows:

A glass-stoppered, wide-mouth, 30 cc. flask is employed, of a depth that should the preparation be administered intramuscularly, will permit the hypodermic needle used to reach its bottom. A wide mouth prevents any "606" adhering to the sides of the neck when emptying the contents of the ampule into the flask. It is convenient to have a flask of such depth that should permit the needle of the syrings used to take up the last portions of the preparation directly from the flask. Boil about 10 cc. of distilled water in a test tube and pour the boiling water into the flask. The Salvarsan is next dusted upon the water and dissolved by vigorous agitation for a few seconds. To this aqueous solution of the "606" is added the required quantity of the standard solution of NaOH (3.6%) i. e., one cc. for each .1 gm. of "606" employed, if the clear alkaline solution is desired or .5 cc. of the standard solution of NaOH for each .1 gm. of "606" employed, if the neutral suspension of the precipitated base is desired. The flask is again well shaken after the addition of the NaOH and the preparation is next made up to the proper quantity with normal salt solution, usually 20 cc. if to be injected intramuscularly and 100 to 250 cc. if intravenously. Of course, at all times must the most aseptic precautions be observed and all solutions and apparatus sterilized before use.

VARIATIONS IN THE TONICITY OF THE ABDOMINAL MUSCULATURE AND THEIR SIGNIFICANCE.*

By J. L. LOHSE, M. D., Oakland.

The selection of this subject for a paper was determined upon by the conviction that a great and unwarranted lack of consideration has been given to one of the most important systems of our body, —namely the muscular system; and that by this neglect much is overlooked that has a direct bearing upon the prevention of disorders as well as upon their correction when once they are an established condition. Our failure to appreciate its importance has left open a large field which is responsible for the founding of many large schools for the teaching of irregular practitioners,—mainly the osteopathic. Surely there has been a call for these schools for, as has been pointed out by Alexander Bryce, of Glasgow, if as many as twelve osteopathic schools in the United States can be founded and prosper and their graduates be so successful that others of intelligence take up the study and practice, there is something greatly remiss in the practice of the regular school or lacking in its appreciation of the causes of disturbances in the general health that reside in the musculature. This is not intended as an argument in justification of the right for these schools to exist, but I do wish to lay stress upon the fact that it is now a considerable number of years since the first of them was founded, and that, if the principles underlying their practice were *wholly* fallacious, their number would be on the decrease, their prosperity on the wane, and their graduates find their practice more and more limited. As a matter of fact, the reverse holds true. That such institutions should thrive is sufficient evidence in my mind that conditions leading to a disturbance of the function of the musculature and the bearing these disturbances have upon general health do not receive proper consideration.

In these days of advanced laboratory methods, we lay great significance upon the findings obtained by various examinations of the excretions and fluids of the body and are inclined to be oblivious to the mechanics of the human organism. As a result, mechano-therapy does not occupy the place in general practice that it should. Goldthwait of Boston, in an address before the Boston Medical Library, said that "the human organism resembles, in many ways, a delicately balanced machine made up of many parts, each related to the others, and that which we call perfect health is simply the proper correlation of all these many parts." The muscular system plays a great part in the intricacies of the human machine, and any condition leading to a disturbance in its function is far-reaching in its effect, even to an impairment of the mental powers of the individual concerned.

Under normal conditions of health and development of mind and body, the muscles are found in a state of tonicity that is physiological; the poise of the body in standing, walking, running, and in every movement exemplifies gracefulness, an accurate co-ordination of muscular action, a minimal expenditure of energy, and a performance of the functions of all the viscera to their best advantage. This normal state of contractility means that no muscle, or group of muscles, is being subjected to undue strain when the individual is standing at ease. The head is held erect, the shoulders are thrown back, the abdomen is flat, and the spine presents no lateral deviation from the perpendicular, but has a slight dorsal curvature with convexity posterior and a compensatory lumbar curvature with convexity anterior. The pelvis is tilted forward so that the anterior aspect of the fifth lumbar vertebra is on a plane just posterior to the center of the hip joint. The iliopsoas muscle, by its normal state of contractility, assists in maintaining the pelvis in this position. In this attitude, opposing or antagonistic muscles are perfectly balanced, so that there is no unnecessary expenditure of energy in the one while the other is in a state of relaxation. Because of their ready adaptability to every action that they are called upon to perform, there is a perfection of grace that is not acquired otherwise, and complications in the actions of muscles are reduced to a minimum.

Probably one of the most important problems to be considered in this subject is the relationship that exists between the functions of many of the viscera

* Read before the Alameda County Medical Association, November, 1911.

and the state of tonicity of the musculature. The correct attitude that an evenly balanced musculature implies provides for such dimensions of the thoracic cavity that the lungs are permitted to fill to their utmost capacity on each inspiration. This perfect aeration is a guardian of the health of the lungs and permits of a thorough oxidation of the blood with the least possible effort on the part of the circulatory apparatus. The maximal antero-posterior diameter permits of the greatest freedom in the action of the heart, whether under conditions of rest or great strain; and for this reason, not only are the resources of the heart muscles greatly conserved, but every other structure is insured a more nearly normal supply of blood.

A consideration of the abdominal viscera in this regard necessitates the explanation of a few anatomical facts for here we have a number of soft and hollow organs enclosed within a cavity, the walls of which are for the most part composed of soft structures. The knowledge of these facts is a great aid in arriving at a better understanding of the factors concerned in the support and maintenance of the viscera in their normal position. With the body in the correct attitude the normal curvature of the lumbar spine brings the surface of the fourth and fifth lumbar vertebrae very close to the anterior abdominal wall, so that the distance between them is only one-third the thickness of the body; instead of finding the deep grooves on each side of the vertebrae as is present opposite those higher up, the psoas and quadratus lumborum muscles with the retroperitoneal fat so completely fill them that the surface of the abdominal wall posteriorly is practically level. From the level of the fourth lumbar vertebra the spine inclines sharply upward and backward, and coincident with this the lateral vertebral spaces rapidly become much deeper. This, as the upper part of the cavity is reached, accounts for a marked difference in its depth and, with an increase in this dimension, the other dimensions are proportionately greater. In this spacious upper half are found the viscera with ample space for their support and performance of functions to the best advantage, while below, in that part with the greatly shortened diameters, are found practically only the coils of the small intestine.

The posterior abdominal wall by this conformation assists so greatly in the support of the viscera that its importance in this regard can only be fully appreciated by the study of frozen sections. By these we see that the kidneys lying in the deep lateral vertebral grooves, from approximately the fourth lumbar to the twelfth dorsal vertebra, are on a plane considerably posterior to that of the anterior surface of the body of the fifth lumbar vertebra. Their upper poles are on a plane even more posterior than the lower, and their ventral surfaces do not reach as far forward as the anterior surface of the body of the twelfth dorsal vertebra. By this we have explained a factor that, supplemented by the presence of the retroperitoneal pad of fat and renal fascia gives ample support for the kidneys, provided the tonus of the abdominal muscles is physiologically normal.

The liver, by its upper surface, fits accurately into the vault of the diaphragm. Its right lobe, that constitutes the major portion, has a broad and rounded posterior surface that on transverse section is seen to represent the base of a triangle, the apex of which corresponds to the sharp anterior border. This surface corresponds to the tenth and eleventh dorsal vertebrae; and because of the dorsal curvature of the spine, is placed on a plane even more posterior than that of the kidneys. Added to the downward and forward direction of the spine in this region, there is a decided contraction of the chest wall, due to a decrease in the radius of curvature of the ninth, tenth and eleventh ribs. This gives to the shape of the space in which the liver lies the contour of a cone, the apex of which is pointed downward; and by this we have explained a factor of importance in the support of this organ.

A study of the inferior surface of the liver is interesting.. The direction of its plane is *backwards* and *downwards,* which fact in itself is of great significance. It presents elevations and depressions by which it is seen that it rests upon the lower dorsal vertebrae, the crura of the diaphragm, the great vessels, the upper pole of the right kidney, the hepatic flexure of the colon, the duodenum, pylorus and stomach. Because of the rigidity of the spine supporting it posteriorly an actual descent of the liver could take place only after a primary rotation on its transverse axis. This would displace the anterior border (the apex of the wedge mentioned) downward and forward, and the posterior surface (base of the wedge) would look upward. But here we have other elements assisting in its support, namely, ligamentous structures, and the tonicity of the abdominal muscles. Of the five ligaments that are described in works on anatomy as giving it firm support, there is no one that serves so efficaciously in preventing its descent, after primary rotation has taken place, as does the vena cava inferior. A careful dissection of it will reveal the fact that its fibrous wall is intimately and inseparably connected with the supporting connective tissue structure of the liver as it passes through the fissure on its posterior surface, and also with the fibrous tissue of the crura of the diaphragm and the central tendon. The tonicity of the abdominal muscles gives the support to the soft tissues that form the bed of the liver anteriorly; and so the rotation on its transverse axis by which the anterior border may reach as low as the umbilicus is prevented. It may be mentioned here that the cases of hepatoptosis as described by some authors do not occur as the strict meaning of the word implies, but instead are cases in which the liver has merely rotated on its transverse axis.

A consideration of the position of the stomach and the relations of some of the abdominal viscera to it will show what a tremendous factor the normal tonicity of the abdominal muscles is in maintaining it in its proper position. Its fundus lies deeply placed in the left lateral vertebral groove. Prof. Cunningham, of the University of Edinburg, gave to the space that it occupies the name of "stomach chamber"; and its description is best given by quoting his own words. "When the

stomach is distended, it completely occupies this space, but when empty the transverse colon passes into it, doubling up over the stomach. The chamber presents an arched roof, an anterior wall, and an irregularly sloping floor. The roof is formed partly by the visceral surface of the left lobe of the liver, and, in the rest of its extent, by the left cupola of the diaphragm, which arches downwards, behind, and on the left to meet the floor. The floor, or 'stomach bed,' is a sloping shelf on which the under surface of the stomach rests, and by which it is supported. The bed is formed behind by the top of the left kidney, suprarenal capsule, and the gastric surface of the spleen; in front of this by the wide upper surface of the pancreas, and more anteriorly still by the transverse mesocolon, running forwards above the small intestine from the anterior edge of the pancreas to the colon, which latter completes the floor anteriorly. The anterior wall of the stomach chamber is formed by the abdominal wall between the ribs on the left and the liver on the right side."

The cecum and iliac portion of the pelvic colon lie upon shelves formed by the inward slope of the ilio-innominata, the ilio-pectineal ridges, and the promitory of the sacrum; the muscular padding provided by the psoas and the iliac vessels lying along its inner border increases the efficiency of these shelves or ledges. These positions and relations of the viscera are obtained in the individual of the normal type. Disturbances in their support and function are found in those suffering from congenital or acquired anatomical defects, and in those whom by faulty posture or by occupation have produced changes in their skeletal alignment. Errors in dress, such as the wearing of bad corsets, Reynolds & Lovett of Boston have shown, are responsible for many vague abdominal symptoms. But it may be said that there is no one factor that is so important in the general economy of the body as the normal tonicity of the musculature. By the efficiency and physiological state of contractility of the abdominal muscles we have provided that mysterious force known as intra-abdominal pressure.

A hypertonicity of the abdominal muscles is not so productive of trouble as is the state of hypotonicity. It prevails very frequently in those individuals, especially young women, who have a highly sensitive nervous constitution that keeps the musculature ever on the alert, as it were. Inflammatory conditions, or irritative lesions within the abdomen, such as chronic appendicitis, a contracted fibrous appendix, adhesions from whatever cause, the presence of calculi of the urinary or biliary systems, hyperacidity of the gastric juice, duodenal and peptic ulcers, and intestinal parasites, all produce such a state. The levator ani below, the diaphragm above, and the external and internal oblique, transversalis, and recti muscles in front and laterally are all opposing each other; and it becomes a case of the survival of the fittest. Too often it is the levator ani that becomes exhausted first. Unable to contend against its more powerful opponents its fibers relax, are overstretched, and are then unable to recover their tone. This relaxation leads to disturbances in position of the pelvic viscera with subsequent phenomena; and I believe that the relaxed perinei with displaced uteri so often found in young women who have never borne children can be accounted for in this way. Also such congenital defects as peritoneal pouchings are exaggerated and finally lead to the production of hernia. Backaches, pains in the groins, constipation, and disturbances of digestion are some of the phenomena that may occur from hypertonicity of the abdominal muscles.

Hypotonicity, or a lack of muscular efficiency, means a weakening of one of the most potent forces in the maintenance of the abdominal viscera in their relative positions. Without it, the kidneys, stomach, spleen, and liver are relieved of the pressure from below and in front and thereby find it easy to slide anteriorly off the beds on which they lie before actually descending.

There are many conditions leading to a hypotonicity of the musculature. Hard work, poor food, and living in overcrowded and poorly ventilated buildings will produce it in children along with other constitutional weaknesses. Working hand in hand with their faulty postures, and peculiar conformation of chest walls and upper abdomen, individuals of the habitus enteroptoticus type have an inefficiency of the musculature. The chronic infectious diseases, intoxications, as from mercury and arsenic, autointoxications, and some of the febrile diseases that run a prolonged course, as typhoid fever, are responsible in many cases, and also are the anemias. Prolonged overstretching of the fibers of the abdominal muscles from large intra-abdominal growths and pregnancy will oftentimes, after the condition is relieved, make it impossible for them to resume their normal tone, and these individuals, probably more than any others, are sufferers from displacements of viscera. Obesity, especially that form characterized by the deposition of immense quantities of fat in the abdominal wall is a common factor in the production of hypotonicity. By the mere weight of the fat the abdominal muscles become exhausted, lose their tone, and the displacements of viscera with all the attendant symptoms ensue. When a patient of this type complains of backache, constipation, pains in both inguinal regions and in the right side under the ribs, irritability of the bladder, flatulence and other symptoms of indigestion, no relief can be given her until the true character of her condition is appreciated.

In a few words I would like to touch upon certain features pertaining to the muscles of the back. In the deepest layers of muscles of the back and posterior aspect of the neck are groups of muscles that, by their origin and insertion, have a direct action upon the ribs and vertebrae to which they are attached. I refer especially to the units constituting the erector spinae, the trachelo-mastoid, complexus, rotatores spinae, interspinales, and the intertransversales. It is recognized that these muscles, singly or in groups, may go into a state of spasticity, that by its continuance

becomes more or less chronic. The cause may be from violence, exposure, posture, occupation, sleeping on badly constructed mattresses, or from irritation to the nerves supplying them, whether peripheral, central, or reflex. By a persistence of these contractures, or state of hypertonicity,' the points of attachment of these muscles become approximated. This approximation means that there is a disturbance in the relation between the articulating surfaces of the bones involved, or in the proper alignment of that part of the skeleton. Opposing groups of muscles become exhausted and finally relax from the continued stretching, thereby subjecting the ligamentous structures to continuous and undue strain. As a consequence the individual is easily fatigued, and suffers from pain of a greater or less degree.

In concluding I will say that I believe many patients, who go the rounds from physician to physician without getting relief, are sufferers from some disturbance in the mechanics of their bodies, and that these disturbances most commonly reside in the musculature. The conditions that are responsible for them should always be borne in mind when taking the history of a patient. The predisposing influence that faulty postures, whether from habit, or occupation, the wearing of bad corsets and bad shoes, chronic infectious diseases, and disturbances in metabolism have in the causation of abnormal variations in the tonicity of the muscles, should be fully appreciated, for then I believe there will be fewer dissatisfied patients, quicker and more permanent cures, besides a much smaller patronage given to practitioners of the "bone-setter" type.

TREATMENT OF VASCULAR NAEVI WITH CARBON DIOXIDE SNOW.*

By G. H. MIZE, M. D., San Francisco.

It is not my desire this evening to furnish an exhaustive treatise on carbon dioxide snow and the microscopical changes resulting in the tissues from its use, but to present to you the salient points in the preparation and the clinical utilization thereof.

It might be well to present a classification of vascular nevi in order to better understand the subsequent description of the methods employed. I know of no better clinical classification than that adopted by Dr. Friedlander in an article on the subject in the October number of the STATE JOURNAL. It is as follows:

"First—Flat Nevi.

Second—Hypertrophic Nevi.

Third—Angioma Cavernosa.

The flat nevi are subdivided into *naevus araneus* and *naevus flammeus*, the first being commonly called "spider naevus," consisting of a central capillary vessel with small aborescent branches and normal skin between the branches. *Naevus flammeus* consists of a plexus of superficial dilated capillary vessels which are so closely approximated as to show no normal skin between. This form of nevus is what is popularly known as "portwine mark."

The hypertrophic nevus consists of a well defined, elevated, often irregular mass of intercommunicating blood vessels of uniform color. The tumor tends to increase in size for a short time after birth, subsequently remaining stationary.

The angioma cavernosa is similar to the previous form with the exception that it continues to increase in size, at the expense of the surrounding tissue, for an indefinite length of time."

Various other methods have been used for the treatment of vascular nevi, but I know of no other procedure which can be so readily carried out and which produces as desirable results as freezing with carbon dioxide snow. The only other method which approaches this treatment in perfection of results is the application of radium but the cost must be taken into consideration and it must also be borne in mind that telangiectases sometimes result. The radium produces no immediate results and is difficult to keep in place for the length of time necessary, especially on a struggling child. I shall demonstrate this evening the method of preparation of the snow and I am glad to have this opportunity of presenting some of the cases treated by this method in the Dermatological clinic in this college.

The carbon dioxide is supplied as a liquid in an iron cylinder. The apparatus for collecting and compressing the snow consists primarily of a brass cylinder perforated by numerous small apertures and around this cylinder is wrapped a piece of chamois, bound on by windings of silk thread, and surrounding the whole is a perforated hard rubber sleeve. The upper end of the tube is threaded for the insertion of a reducer by which the collector is attached to the supply tank. The lower end tapers to an aperture 1 cm. in diameter. In collecting the snow the outlet of the supply tank is placed at a lower level than its base, the collecting apparatus wrapped in a towel and attached to the tank and the valve opened. A portion of the escaping fluid evaporates so rapidly that sufficient cold is produced to freeze the remaining carbon dioxide in the apparatus, into a loose snow. When the apparatus becomes filled with the snow the reducer is removed and a brass plunger with a threaded piston is inserted and screwed down until further compression is difficult. The resultant block of ice can be extracted by removing the tapering nozzle or by running hot water on the apparatus and shaking the ice from the base. The block is then shaped as desired and is ready for application.

When an extensive *naevus flammeus* is to be treated, several applications of the snow are necessary in various portions of the growth and with the cylindrical block of carbon dioxide there is apt to be overlapping of the circles treated. To obviate this difficulty Dr. Friedlander has modified the collecting apparatus so that a tapering square block of snow is obtained and with this, treatment can be approximated upon treatment without overlapping.

Before making the application it is well to clean the skin with alcohol. The block of snow is then grasped with tissue forceps and applied firmly for a variable length of time, depending upon several fac-

* Read before the Cooper College Science Club, Dec. 4th, 1911.

tors. Firm pressure is necessary to prevent the formation of a layer of gas, called Crook's layer, between the snow and the area to be treated, which layer interferes with the desired freezing.

The duration of the application at each treatment depends upon the nature and location of the growth, the amount of destruction desired, the age and sensitiveness of the individual and the previous treatment. In the average case five seconds will remove the top cellular layer, ten seconds will attack the papillary layer while twenty to sixty seconds will suffice for deeper growths. In exposed areas, as upon the face, it is well to be cautious and begin with a short treatment until the individual succeptibility is determined. When a rapid result is desired on a portion of the body which is covered with clothes the duration of each application can be increased, as a scar is not of so serious a consequence in this locality as it would be upon exposed portions of the body. Too lengthy applications may produce a depressed or a hard, ivory-like scar but this is usually due to an error in technic. Undesirable results are, however, comparatively rare.

The face and flexor surfaces are most sensitive to the treatment. Women, particularly blondes, are more sensitive than men, while children are three or four times as sensitive as adults.

Immediately after the application of the snow the area treated appears white, depressed and hardened and upon thawing, which requires one to three minutes, an erythema develops. Within 2 to 24 hours a vesicle forms upon the area treated and this is replaced by a crust in 2 or 3 days. In 9 to 14 days the crust separates leaving a smooth scar of normal color or of a slightly pinkish tinge which becomes normal within a week or two.

During the freezing process the patient experiences but little discomfort, but when thawing begins a moderate amount of burning is usually felt and sometimes a transient neuralgia develops.

In freezing growths on or near the eyelids a piece of dry cotton should be placed between the lid and the eyeball to prevent the freezing of the latter tissue. The same precaution holds good when growths at the borders of the lips are frozen.

The number of treatments required varies with the severity and depth of the nevus, but in a large majority of cases one treatment will suffice. In our series of cases cures have been accomplished in a large majority of instances and improvement has been noted in all.

Little after-treatment is required, the application of equal parts of zinc oxide ointment and petrolatum being all that is necessary.

Cases Demonstrated.

Case No. 1. K. H. Diagnosis, angioma cavernosa. No mark was noticed by the mother at the time of birth of the child. The condition first appeared about one month after birth as a small red spot in the median line of the forehead and has progressively increased in size for five months. At the time the patient was brought to the clinic for treatment she presented in the median line of the forehead at the hair border a purplish tumor ⅜ of an inch in diameter and elevated ¼ inch. Freezing the growth twice caused its disappearance, leaving a smooth scar, slightly depressed and paler than the normal skin. The scar is rapidly fading and in another six months it will be practically impossible to see it.

Case No. 2. C. G., age 4 months. Diagnosis, angioma cavernosa. The present condition was first noticed at the age of 7 weeks as a small red spot beneath the right eye. The tumor rapidly extended peripherally and in elevation until it became the size of a ½ walnut and purplish in color, which was the condition appearing when we first saw the child. After seven treatments the elevation has diminished to half that which originally presented and the diameter is also considerably less. The growth is more firm and does not now distend to any marked degree when the baby cries.

Case No. 3, age 15 mo. Diagnosis, angioma cavernosa. The mother first noticed the present condition as a small red point at about the middle of the left cheek. It gradually increased in size and subsequently a similar growth appeared on the left side of the back of the neck. At the time the child appeared for treatment she presented beneath the left eye a purplish, soft tumor 3x2 cm, elevated 1½ cm. At a lower level on the same cheek she presented a similar tumor 2x2 cm, elevation 1 cm. Another similar angioma 2x2 cm appeared on the back of the left side of the neck. After six treatments all the tumors have diminished considerably in size and the overlying skin presents almost a normal color.

Case No. 4. W. B., age 6 months. Naevus Araneus. The present condition began soon after birth as a minute red dot over the right malar eminence and has increased considerably in size since. After freezing once with the carbon dioxide snow the condition completely disappeared without leaving any scar.

MEDICAL LAWS OF CALIFORNIA.*

By CLARENCE F. LEA, Santa Rosa.

California, in common with most of the other states of this country, has attempted to regulate the practice of medicine. In 1876 the legislature passed an act specifying the requirements for the right to practice medicine and providing for a State Medical Society, who had charge of issuing certificates to persons who established their right to certificates to practice; said Medical Society was also given power to refuse the right to practice to individuals guilty of unprofessional conduct, and for similar cause they could revoke certificates to those who were practicing. In that original act a person practicing medicine was defined to be one, "who shall profess publicly to be a physician and to prescribe for the sick, or who shall append to his name the letters of M. D."

The law provided for only one form of certificate to practice medicine. The holder of a diploma as a graduate in medicine was granted a certificate without further examination; if not a holder of a diploma, the applicant was required to submit himself to such examination as the board should require, and if satisfactory to the board, the applicant was granted a certificate.

After two years' trial of the original act, it was evidently found insufficient and was amended in 1878. A somewhat unique provision was inserted in which the law prescribed that a diploma presented by an applicant should be examined as to its genuine-

* Delivered before the Sonoma County Medical Society at Santa Rosa, August 10, 1911, by Clarence F. Lea, District Attorney, Sonoma County, California.

ness, and if it be found as represented, the secretary of the board should receive a fee of five dollars, but if the diploma be found to be fraudulent, the board should charge and collect from the applicant the sum of twenty dollars. The law did not go further and provide as to any other result from presenting a diploma found to be fraudulent. The act of '78 also provided that the Medical Society of the State of California, the Eclectic Medical Society and the State Homeopathic Medical Society and no other corporations or persons should appoint members on the Board of Examiners. The act of '78 also attempted to provide a method for hearing and enforcing the attendance of witnesses where charges of unprofessional conduct were made.

In 1901 the legislature again enacted a law regulating the practice of medicine in this state. This law was also amended in 1907, in 1909, and also at our recent legislature in 1911. However, the general purpose of these regulatory provisions have been the same. The provisions of the law are more satisfactory now than at the earlier dates when regulations were attempted. That is, the law is more practical and specific in its provisions, and enforcement has been made somewhat easier.

As the law now stands, the State Medical Board has its office at San Francisco, and is composed of eleven members of which five are of the Allopathic, two of the Homeopathic, two of the Eclectic and two of the Osteopathic system of medicine.

The law now provides for the issuance of three forms of certificates instead of for only one, as under the original acts. Under the present regulations, the Board may issue:

First, a certificate authorizing the holder thereof to practice medicine and surgery;

Second, a certificate authorizing the holder to practice osteopathy;

Third, a certificate authorizing the holder thereof to practice any other system or mode of treating the sick or afflicted not referred to in that section.

In order to receive a certificate permitting practice of medicine and surgery, the applicant must present a diploma from a legally chartered medical school, the requirements of which are equal to those prescribed by the association of American Medical Colleges, or satisfactory evidence of having possessed such diploma.

An applicant for a certificate to practice osteopathy, is subject to the same regulations otherwise, except that in place of the diploma, they shall be required to file a diploma from a legally chartered college of osteopathy, having a course of instruction of at least three years of nine months each, and including the studies examined upon under the act regulating the admission to practice.

Applicants for a certificate to practice any other system or mode of treatment are otherwise subject to the same regulations, except that they shall be required to file a diploma from a legally chartered college of the system or mode of treatment which the applicant claims or intends to follow.

The law now further provides that the State Board of Medical Examiners may issue a certificate to any person who has practiced a special branch of medicine and surgery for a period of not less than thirty-five years, fifteen years of which time shall have been spent within the State of California. The latter sort of an applicant shall not be required to file any diploma, but may be required to take an examination of a practical character; and in reference to special applications of this character, it is further provided that the board may require a practical demonstration and proof of effecting a cure, in such special line, before a certificate shall be issued to such applicant.

And the law now further provides unless otherwise stated all applicants must be personally examined by the board as to their qualifications. Such examination shall be practical in character and designed to discover the applicant's fitness to practice his profession, and such examination shall be upon the fundamental subjects, named in the statute.

There is a further provision of the law giving any surgeon honorably discharged from the Medical Department of the United States Army or Navy, regular or volunteer, the right to practice medicine and surgery in the State of California, by filing a sworn copy of his discharge with the State Board.

The law further makes it a crime for any applicant to use a counterfeited or substituted or fraudulent diploma in attempting to procure a certificate to practice; or to practice under an assumed name. It is also a misdemeanor to assume the degree of doctor of medicine or append the letters "M. D." to one's name, without having such right duly conferred upon him by a diploma from a recognized medical college or school legally empowered to confer the same. The law also includes a further requirement that all persons engaged in the practice of medicine, surgery, osteopathy, or any other system or mode of treating the sick or afflicted shall cause to be displayed in a conspicuous manner in his office the name of every person employed in such practice by him.

It is also made a crime to practice medicine, surgery, osteopathy or any other system or mode of treating the sick or afflicted in this state without a certificate from the Board of Medical Examiners, or after the certificate granted has been revoked, or suspended. It is also provided that a person who in any sign displayed by him, or in any advertisement published in a newspaper shall use the word "doctor" as indicating or implying that he is a doctor of medicine, either before or after his name, shall append the letters "M. D." to his name without having, at the time of so doing, a valid, unrevoked certificate, shall be guilty of a misdemeanor.

The commission of the above defined offenses on proof thereof and conviction, is made punishable by imprisonment in the County Jail not less than ten days nor more than one year, or by a fine of not less than one hundred dollars nor more than one thousand dollars.

The latter provision enacted by the legislature of 1911, which raises the maximum penalty that may be imposed from six months to one year's imprisonment, and increases the possible fine from five hundred to one thousand dollars, is an important change in the law so far as the practical enforcement of it is concerned. By this change, the justice

courts have been deprived of jurisdiction to try these offenses committed after the first day of July of this year, and jurisdiction is conferred upon the Superior Courts to try the cases. Of course, the proceeding is instituted as previously, by filing a sworn complaint in the justice's court, where a preliminary examination is held, and on showing a prima facie case of violating the law, the defendant would be held over to the Superior Court for trial.

As a usual thing, a justice of the peace is not legally qualified to preside at an important trial, and his court does not present those dignified methods of procedure that are usually necessary to accompany the enforcement of the law successfully.

Of course, under the law, as it now stands, persons who held certificates to practice under the old acts heretofore cited, are permitted to continue the practice. Also a person who holds an unrevoked certificate issued by the Board of Examiners of the Association of Naturopaths of California, prior to 1907, are permitted to continue the practice upon other certificates being reindorsed.

And, of course, the acts as they stand do not inhibit service in cases of emergency or the domestic administration of family remedies.

Under the law as it now stands "unprofessional conduct" is defined as being:

First, the procuring or aiding or abetting in procuring a criminal abortion;

Second, the wilful betraying of a professional secret;

Third, of advertising of medical business which is intended or has a tendency to deceive the public or impose upon ignorant persons, and so be harmful or injurious to public morals or safety;

Fourth, all advertising of any medicine or means whereby the monthly periods of women can be regulated or re-established if suppressed;

Fifth, conviction of any offense involving moral turpitude;

Sixth, habitual intemperance;

Seventh, the personation of another licensed practitioner of a like or different name.

A trial upon a charge of unprofessional conduct must be had before the State Board of Medical Examiners, that not being a matter of which the ordinary civil courts take jurisdiction.

It is a part of the duty of the Board of Medical Examiners to assist in the prosecution of persons charged with illegally practicing medicine.

The question as to the constitutionality of these statutes and the right of the legislature to enact the same has frequently been disputed. But those questions are now settled in this state, and the constitutionality of the laws along the lines heretofore enacted by our legislature is fully established. We cannot ignore the fact that there is a more or less widespread opposition to the enforcement of these laws. In an indifferent way the opposition is founded upon an ignorance of their provisions and purpose, but in a more active way the opposition is due to the efforts of illegal practitioners and their friends. The cry of interfering with personal liberty is one to which the average layman gives an attentive ear. The charge that these laws have been placed upon the statute books for the benefit of the medical profession and to aid them in monopolizing the business rather than for the public good, is a charge frequently made and entertained by a greater or less number of people. This opposition is to some extent a thing to be reckoned with in the practical administration of the law, but should in no way prevent attempts at the enforcement of the law. The fact that there is such an opposition is commonly met with, and was incidentally brought to my attention since it was announced in the papers that I was to appear before the medical society, by my receiving communications from two widely different sources enclosing me literature extensively denouncing the medical fraternity. But to my mind there is not the slightest doubt of the beneficial effect and necessity for statutes along the general lines of those enacted in this state. Our statute, to be of any value, in protecting the public, could not be more liberal than it is when it authorizes granting a certificate to a properly qualified person, in any mode of treating the sick or afflicted, who passes a practical examination in the fundamental principles that furnish the foundation of every method of combating disease.

In a comparatively recent case, our Supreme Court has said: "Such regulations are for the general welfare, and specifically, to protect people from the arts of quacks and pretenders and from the mistakes of incapable practitioners." And the Supreme Court further said that the Board of Medical Examiners constitutes a state agency for the regulation of the practice of medicine and surgery, and that it must discharge that duty impartially for the benefit of the people and not for the promotion of the interests of any school of medicine or medical society.

The state has wisely prescribed qualifications necessary for the practice of every other legitimate profession, and in many instances, it refuses to permit even the individual who is willing, to be made the victim of what the state has determined is against public welfare. This is true of the gambling laws, of all the so-called laws against vice, of the laws regulating and protecting the public against unsanitary conditions, and it is also true of the grosser crimes of violence. The law deprives the individual of the right to be subjected to such crimes, even with his own consent. So the individual, though he may desire to be doctored by quack or incompetent person, should be denied that privilege so far as it can be done practically; because outside of his own rights, society is interested in the preservation of his health, both for his own sake, and for those who may be dependent upon him, and for the sake of society upon which he may become dependent.

Very little has been accomplished in enforcing the law against illegal practitioners in this county. One unsuccessful attempt was made at Healdsburg last year, the jury disagreeing. Through an unusual press of business of more pressing and possibly of more important character, my office did not diligently follow up that prosecution. We expect soon to be able to give attention to such cases, and we believe in the enforcement of these laws, and will be glad to have the co-operation of the medical society in taking these matters up as violations of the law may hereafter require.

To do so we should first have the proof so that we can establish a meritorious case, and whether the jury convicts or acquits, we can then have the satisfaction of knowing that they should have convicted, and eventually public sentiment will approve and aid such prosecutions.

The practice of medicine without a license does not belong to the class of crimes designated as *mala in se*—that is, bad in themselves. It belongs purely to that class of offenses designated as *mala prohibita*, being bad only because the legislature has so declared. In this class of offenses where the prosecution is not able to present any specific injury or injured person, as a result of the violation of the law, the average layman as a juror is disinclined to convict. He is more inclined to resort to manufactured excuses or sophistry to excuse himself from performing his duty, than he is to enforcing the law. The average layman undervalues the importance to society of enforcing the laws, as they are written, and his lack of training and experience makes him underestimate the value and importance of the law intended to protect the public as well as the careless individual, against the incompetent and unscrupulous practitioner. Even though the law should be entirely and technically enforced against every practitioner without a license, yet even then, we have only partially accomplished the purpose designed to be attained by the law. The medical profession, unfortunately, like every other profession and class of men, is not without its unscrupulous and incompetent practitioners. The true interest of legitimate practitioners, as well as that of the public, demands that all good citizens should co-operate to eliminate the unprofessional, unscrupulous and illegitimate practice of medicine. The abilities and genius of men were never applied to a higher or more sacred calling than that of a physician. The possibility of a commendable career both from a selfish standpoint and from the public standpoint is nowhere greater than in the medical profession, and every layman to a limited degree at least, has the same interest in upbuilding the medical profession, as have our most commendable practitioners.

A CASE OF PARTIAL TREMULOUS SCRIVENER'S PALSY;

The Psychogenesis of Which Was Discovered in One Interview Which Led to Recovery Through the Patient's Own Effort.

By TOM A. WILLIAMS, M. D., C. M.

A naval paymaster, aged thirty-two years, single, was referred to me early in 1908 by his brother, a physician in Boston, because when he returned to work after the drainage of a large perityphiitic abscess which discharged for a month, he found that his signature was no longer uniform. Instead of improving, he became worse with practice; and although his other writing was not so seriously impaired he had ceased writing entirely and conducted his correspondence by dictation and signatures. His signature is exceedingly shaky; and as it was made with ever increasing difficulty as the day progressed and became almost illegible in the afternoon, he feared that he would lose his position. As may be imagined, the ever-recurrent anxiety of this tended to make his writing still more difficult and tremulous.

Previous Illness and History. The patient had a good recovery from typhoid fever in 1890. In 1901 he had inflammatory rheumatism which, however, left no cardiac weakness or other after effect. As a child, he had pertussis, scarlatina, mumps, measles and pneumonia. He is still subject to amygdalitis which is sometimes febrile, which makes him feel out of sorts. Nine years ago he had gonorrhea. He is positive there has been no chancre. He used to have malaria, but has had none since 1900 or so.

Present Illness. His trouble is comprised in the statement that he is "unable to write as his work requires." He admits that he is nervous in making a signature before me; and says that he can make it better than this. He had not fully recovered his strength on returning to work after his operation, and used to tire. But he had not noticed any particular change in his writing until his attention was drawn to a lack of uniformity in his signature of the checks he signed by the declaration of a bank official who refused one of them. He had not worried about his writing at all before this: but after this became apprehensive about it all the time. The naval doctor whom he consulted merely gave him bromides, which of course did him no good as regards the power to write. His brother, the physician, believed that he had had toxaemia and post-operative shock.

Examination: The deep reflexes were exceedingly active. The cutaneous reflexes were feeble, but the toes flexed upon stroking the sole.

The pupils reacted to light and accommodation. The cardiac rhythm was not perfectly regular. But there was no enlargement, thrill or bruit. There was no sclerosis of the arteries and the pulse was soft, moderate in frequency and without abnormal characters, although the right impact seemed feebler than the left. There was slight emphysema of the lung. The examination was otherwise negative.

This condition of the reflexes is consistent with a toxicosis interfering with the full function of the cerebral neurones which inhibit the activity of the deep reflexes and, it is believed, subserve that of the cutaneous reflexes.

But as the state of the reflexes of this patient threw no light upon the genesis of his condition, it was necessary to ascertain this otherwise. The question which arose was whether the patient's incapacity at present arose directly from an intoxication of his neurones, or whether both his incapacity and the toxicosis were psychogenic. Analysis of his psychological history might elucidate this problem. So it was undertaken.

In purely toxic states, often labeled neurasthenic, while the reflexes are sometimes enfeebled, in some cases they are exaggerated. It perhaps depends upon the nature of the poison producing the syndrome. In *psychogenetic* states of anxiety, the deep reflexes are always exaggerated.

Psychological History. The patient never had a nervous breakdown, but has sometimes been depressed after very hard work. He has applied himself very closely to his duties, the responsible nature of which he fully realizes. He is unusually young for the position he fills. In consequence, he has neglected physical exercise since the age of sixteen years and saves himself from becoming too stout by going without lunch. He works nine and a half hours a day, and likes it.

As a boy, he was very conscientious, and was always annoyed if things were not correctly done promptly. This was shown by his behavior with regard to the chicken house in which he kept chickens for amusement and pocket money as a boy. This extreme orderliness was not a family trait, although his father also had it. He had no overscrupulous ways, and was not over particular in his studies, although he worked hard. He had no morbid fears and no religious crises, as he was not particularly devout and had no set views. He thinks that as a boy he was sexually passionate. He has not masturbated since twelve years of age; and has had no sexual difficulties, being able to abstain or indulge as the occasion arises. He does not care for society, and prefers men to girls; and though he has some intimates, he has no deep attachments.

These characteristics have persisted into adult life; so that if things do not go right, the passion for order impels him to rectify them himself rather than take the trouble to make others do it. He has never suffered from tics, not even having made facial grimaces, which are so common in boys. I tested his suggestibility by pushing him by the shoulder. He moved only a short distance, and quickly checked himself by bending his knees. There was no rigidity of movements other than those used in writing. In his writing there was no rigidity of the extreme kind seen in the so-called spasmodic form of writer's cramp. His disability would conform to the type called tremulous by Benedict. It was rather a hesitancy than a cramp.

Pathogenesis. From these facts it can be induced that the patient's attempt to resume work necessitating long continued writing, before he was in a proper state to do so, led to a tremulousness of the hand and arm similar to that which ensues upon excessive consumption of coffee or tobacco or upon the toxin of some infectious or fatigue condition. The condition would probably have been recovered from spontaneously as he regained strength had not another element been added by the dread of permanent incapacity led to by the refusal of his check at the bank. This was the really efficient cause of his present disability. Hence, it was to this that therapeusis was exclusively addressed.

Treatment. Here the role of mental prepossession in inhibiting the due coordination of muscular movements was explained to him and illustrated by means of the strokes used in lawn tennis, more especially that known as the drive. It was shown that fear of making an improper stroke is very likely to lead to lack of freedom and cramping of the muscles, which are the very positions to be avoided. Still greater anxiety will create an uncertain, wabbling stroke, the incoordination of which is comparable to his writing.

A further illustration used was that of Jastrow's investigation of the relative efficiency of the employees who first used the enumerating machine in the census of 1900 against those who were brought in later on account of the disappointing output of the others. The special preparation of the first set of clerks so far from giving greater speed, only produced the feeling of the difficulty of the task, which they never transcended, being quickly surpassed in amount of work by the clerks who received no special preparation whatever.

The relation of these facts to the episode of the refused checks was discussed with him at length. When he had clearly realized the psychological mechanism of his condition, he was directed entirely to cease writing with purpose, and to begin exercises by making free arm movements with chalk on a blackboard, paying no attention to the forms he drew, but concentrating himself upon the attainment of freedom in action. When this was insured, he might pass to a slate and later to pencil and paper, and then gradually reduce the size of the writing. He was asked to send me specimens of his efforts, but this he did not do, and he did not reply to an inquiry addressed to him one month later, but over two years later he sent me the following * specimen, and informed me that he had almost entirely recovered after one month of the exercises prescribed.

It should be added that this patient's disability was entirely confined to writing, for even in drawing and letter printing there was hardly a tremor of the hand.

The whole matter of the psychogenetic occupation neuroses is entered into in detail in a forthcoming monograph of the author. In this the more difficult cases and their successful treatment are described.

* N. Y. Med. Jour., Oct. 11th.

See also preliminary communication to Congress of French Neurologists; and in Washington, Medical Annuals and Monthly Cyclopaedie, May, 1911.

ANNUAL MEETING

—of the—

STATE SOCIETY

April 16th, 17th and 18th, 1912

HOTEL DEL MONTE

ARE YOU GOING?

HENRY GIBBONS, JR.*

Henry Gibbons, Jr., M. D., was born in Wilmington, Del., September 24th, 1840. His father was Henry Gibbons, M. D., later on one of the best known and appreciated physicians in California; he was an excellent practitioner, teacher and lecturer. For many generations Dr. Henry Gibbons' ancestors were Quakers. He came to California in 1850. Dr. Wm. Gibbons of Alameda, and Dr. Edward Gibbons of Oakland, California, both now dead, were his brothers. Dr. Henry Gibbons, Jr.'s mother was Miss Martha Poole of Wilmington, Del., a highly intelligent, charming Quaker lady.

Dr. Henry Gibbons, Jr., came to California via the Isthmus with his mother and four sisters in 1851. They lived in San Francisco, California, for a few years, and then in Alameda, California, until 1863. He attended the high school in San Francisco and graduated from there in 1859. He then commenced the study of medicine at the earnest request of his father, but was strongly inclined to higher mechanics, having natural gifts in that direction. It is probable that he made no error in deciding on medicine.

He studied at the Medical College, University of the Pacific (now Cooper College of Stanford University) and graduated in 1863. The professors at that time were Drs. L. C. Lane, Isaac Rowell, R. Beverly Cole, A. J. Bowie, J. F. Morse, Geo. Barston and Henry Gibbons.

Almost at once he went to Washington, D. C., and was employed as an acting Assistant Surgeon, U. S. A., in Douglas Hospital to the end of the war in 1865. Here he had a large experience in gunshot wounds, camp and other diseases that come to healthy men in the field. He soon took a first class rank with those of more age and experience. His amiability and attractive personality were wonderfully pleasing to his associates and ward patients. He returned to San Francisco early in 1866, where his family joined him, and where he lived to his death. He associated himself with his father in the general practice of medicine and surgery, there being few, if any, specialists at that time but those for the eye. He was also a valuable assistant to his father in editing the Pacific Medical Journal.

In 1871 he joined the Medical College from which he graduated and lectured on materia medica and therapeutics. In '74 he was given the chair of obstetrics and diseases of women and children. This chair he filled to the end of his life. His natural disposition and pleasing manner charmingly adapted him for this branch of medicine; and he followed it almost to the exclusion of all others, and greatly to the satisfaction of his students, patients and fellow practitioners. In this specialty there was probably no one more widely and favorably known in California. His practice was large, exacting and trying, but he seldom took a vacation or more than a day or two.

His versatility was shown on one occasion, when in the country remote from usual appliances he extemporized Buck's apparatus and applied it to a lad's broken femur so completely and skillfully that the patient required no further professional attention and made an excellent recovery. Again, soon after, he performed Cesarean section, saving both mother and child. Dr. Gibbons was Dean of the Medical Department of the University of the Pacific, and its successor, Cooper Medical College, for many years, and when it was merged into Medical Department of Stanford University he became Emeritus Professor of Obstetrics. He had been Secretary and President of the San Francisco County Medical Society, and a Director for many years. He had been President of the Medical Society of the State of California; a member of the Board of Health in San Francisco; Health Officer in San Francisco; a member of the Board of Education. He was a member of the American Medical Association, and Gynecological and Obstetric Society.

He was Examiner and Medical Referee for many years for one of the best life insurance companies, and during the last few years of his life was Medical Director of a local company.

Besides all of this he was devoted to the interests of Cooper Medical College and Lane Hospital, which took much of his time.

In 1885, having worked hard and feeling out of tone, he visited Europe. Soon after arriving in Paris he had a severe attack of renal colic that spoiled three weeks of his too short stay. Before returning he saw much professionally and other ways and came home refreshed.

Four years ago he had a collision with a rapidly running electric car while in his automobile, which injured him considerably; but in a surprisingly

* This obituary notice was unfortunately received too late for publication in the February Journal with the other notices from the Committee on Necrology of the San Francisco County Medical Society.

short time he seemed as well as ever, and followed his calling with his usual care and attention.

Besides his sickness in Paris he was never seriously ill until his last, which lasted several weeks. He died September 27th, 1911, of cerebral arteriosclerosis.

He was not a "club man" in the ordinary sense, yet he was a highly appreciated member of the Unitarian and Chit-Chat Clubs. For several years he was a "silent" member of the Olympic Club. He was essentially a social man, and often when time permitted prolonged his professional calls to a social visit, with mutual pleasure to patient and himself. He enjoyed most any kind of a play at the theater, but more particularly one from Shakespeare. He needed the recreation, however, and usually preferred the "most any kind." His risibilities were easily aroused. He also enjoyed a game of cards, so his Saturday evenings at home were events. Whenever possible he took outings to the country, having a cottage at Belmont, Cal. These were altogether too infrequent; his many cares of business and other duties compelling him, with his sense of responsibilities, to remain in town. Often this was for the welfare and selfish interests of others.

He was a highly moral man in every particular. In more recent years he was a Trustee of First Unitarian Church.

He married Marie Raymond in 1871. She died in 1899. Their children are Dr. Morton R. Gibbons, Dr. Henry W. Gibbons, Miss Ida L. Gibbons, Miss Miriam Gibbons of San Francisco, Cal., Mrs. E. M. Shinkle (wife of Maj. Shinkle, U. S. A.), and Mrs. Perry Evans, of Berkeley, Cal.

In the death of Dr. Gibbons this community has met with a severe loss. He lived in an age and under such circumstances that he was peculiarly valuable to many, for whom he was glad to do. Thousands in San Francisco are indebted to him for life, health and resulting happiness. His special practice placed him in a confidential position that was never betrayed. The poor, or a friend, never called on him in vain, and the young physician had his eye, hand, ear and heart at command.

Without doubt the good this man has done "will live after him"; the errors—common to humanity—let us "inter" and forget.

VERY LARGE CALCULUS, AND DEMONSTRATIONS.*

By M. KROTOSZYNER, M. D., San Francisco.

Dr. M. Krotoszyner presented the specimen of a very large calculus which was removed by suprapubic cystotomy from a man of 35 years. Although a severe cystitis had existed for over fifteen years, primary closure of the bladder-incision was obtained and the patient left the hospital about two weeks after the operation with his suprapubic incision entirely healed and voiding clear urine at normal intervals. A cutting operation was considered preferable to litholapany in this case on account of the size and cystoscopic appearance of the concrement (oxalate). The attempt to obtain primary closure of the bladder incision in spite of the long-standing cystitis was justified by the fact that the kidneys were found to be functionally and anatomically sound prior to operation.

2. Dr. M. Krotoszyner presented the urinary organs of a man of 82 who had died from urosepsis about a year after suprapubic prostatectomy. The patient had been treated, at first, for a long time for an irregular septic fever which was considered to be of malarial character, until finally severe bladder-symptoms necessitated the patient to be transferred to the writer's service in the hospital. At that time a prostatic hypertrophy of the third stage with ascending infection was diagnosed. After suprapubic prostatectomy the patient improved for a while in health and strength but gradually began to suffer again from pyuria and septic temperatures. The autopsy showed advanced bilateral pyonephrosis, dilated ureters and a markedly trabecular and diverticulated bladder. The case proves the justification of an early removal of the prostate in prostatic hypertrophy with urinary retention before, through ascending infection, the kidneys have become hopelessly diseased.

3. Dr. M. Krotoszyner also presented two tubercular kidneys, both removed from young women between 20 and 30. He accentuated upon the fact that renal tuberculosis of women, in his experience, was as a rule not associated with that of the genital tract. He is of the opinion that at our present state of knowledge, early nephrectomy is the only rational method of treatment for renal tuberculosis, while the expectant or tuberculin-treatment must be considered unreliable and as a grave risk for the health of the patient's second kidney.

* Before the Section on Urology of the San Francisco County Medical Society, October 31, 1911.

RABIES AND THE PASTEUR TREATMENT.

A Review by Fred I. Lackenbach, San Francisco.

Reference to rabies is found in the early literature as far back as the 4th century, B. C. In the words of Aristotle—"Dogs suffer from madness that puts them in a state of fury, and all animals which they bite when in this condition, become also attacked by madness." References to the disease are found in the works of Virgil, Horace, Ovid, and Plutarch. In man the disease is first recorded by Celsus in the 1st century A. D., and he applied to it the name hydrophobia. Galen in the 2nd century, prescribes special remedies for rabies. In 1591 is recorded the transmission of the disease to man by rabid wolves. An epizootic of rabies appeared in Paris in 1604; toward the end of the 17th century in Italy; during the 18th century in France, Germany and England and was first reported in America in 1768. Toward the end of the 18th and during the 19th century rabies had spread over all Europe. In Australia it has been kept out by the enforcement of rigid quarantine laws.

In the United States and throughout North America the disease exists widely distributed. Between the years 1876 and 1882, 44 persons died of rabies in Massachusetts. From 1888 to 1894, 45 deaths are recorded. From 1895 to 1908, according to Massachusetts Health Board statistics, 497 persons were exposed to rabies and were given the Pasteur treatment.

In California the first case of rabies was reported from Los Angeles, in 1898, when several dogs were found infected. The infection is supposed to have originated in skunks or coyotes of Arizona, in which the disease is known to have existed for years. A human case which terminated fatally is reported by Dr. Radebaugh in 1899. This occurred at Pasadena. In 1906, at the Soldiers' Home near Los Angeles, one man and several animals were bitten by a rabid dog. Dr. Colburn reports a case in February, 1910, in which a child of ten was bitten by a stray dog and died some 35 days later. The description of this case is interesting and characteristic:—February 21st, 2 a. m.—"Patient extremely restless, rolling in bed,

jumping up, talking constantly, spitting frequently, crying out as if in pain; cold perspiration, pulse thready—about 180; unable to swallow any liquid for 24 hours. It became necessary to restrain the patient during attacks of extreme restlessness, which were caused by any sudden noise, draught of air, or attempt to swallow any liquid. These attacks lasted about 3 minutes and were preceded by twitching of the muscles of the face, chest and arms, and accompanied by a delirious laugh. When quiet, answered all questions promptly and intelligently. At 8:30 a. m., became comatose, and died at 9:45 a. m." An autopsy was made and Negri bodies found in the brain.

Dr. W. A. Sawyer, Director of the State Hygienic Laboratory at Berkeley, before the S. F. County Medical Society, May, 1911: "Summing up the evidence from the State Laboratory, the Laboratory of the Los Angeles Health Department, the laboratory of the Health Department of Long Beach, and the pathological laboratory of Dr. Stanley P. Black, Los Angeles—Out of 247 examinations of the brains of animals for rabies, 164 gave positive results. 152 of the positive cases were dogs and the remaining cases were distributed among cats, horses, cows and a goat. At least 68 human beings were bitten by the animals which were proved to be rabid by laboratory investigation. If our previous estimate, that not more than one out of every twenty cases of rabies in animals, is examined in the laboratory is true for the whole state, these positive cases would indicate that there had occurred a total number of cases in California of over 3200." In this outbreak five deaths from rabies in human beings are recorded.

The majority of the cases were reported from Southern California, some from the vicinity of Fresno; about one hundred cases in and about Stockton, and one case from Concord, Contra Costa County. This latter case—a boy bitten by a rabid dog—was given the Pasteur treatment at the Hygienic Laboratory, Berkeley. The case was the nearest approach to San Francisco recorded until November last, when a veterinarian reported a suspected case in San Francisco. During the present outbreak in San Francisco some twenty or more dogs suspected of having rabies were killed at the Presidio; four persons have been bitten, three of which are under Pasteur treatment, and other cases are under observation.

Rabies, or hydrophobia, is a specific, highly acute, rapidly fatal disease, generally communicated to man by some lower animal, most commonly the dog. The infection generally is carried through a wound made by the animal's teeth, the saliva being the infective medium. Cats, horses and other warm blooded animals are also subject to the disease and their bites are quite as dangerous as those of the dog. Rabies may also be transmitted by deposits of saliva containing the virus, on abraided surfaces as by licking, or through wounds received while performing autopsies on infected subjects. The saliva of the dog has been shown to be virulent 24 to 48 hours before the animal exhibits any symptoms of illness.

The disease in the dog appears in two forms—the dumb variety, which is by far the most common; and the furious type, which because of its wild, migratory character, is more dangerous to the community. The dumb variety is characterized by progressive paralysis of the lower jaw, marked nervousness, and death usually results in from three to six days. The animal may appear very affectionate but may bite without warning. In the furious type the dog will bite anything which comes in its way. Frequently sticks and stones are found in its stomach on autopsy. Veterinarians lay stress on the peculiarity of the howl, which together with the snapping and the ceaseless unrest, is considered pathognomonic. In both types of the disease there is a terminal involvement of centers controlling deglutition and respiration.

When a person is bitten by a dog suspected of having rabies, the animal should be captured, if this can be safely done, and kept securely confined for a period of ten days. If the animal is alive and well at the end of that time, rabies may be excluded. If the animal dies, or has been killed, the head should be removed, packed in ice in a can or bucket, and sent by express to the State Hygienic Laboratory at Berkeley.

To gain proof of the presence of the disease a laboratory examination of the suspected animal is imperative. It becomes of greatest importance in those cases where human beings have been bitten. If the report is negative the patient is freed from the haunting fear that in ensuing months he may suddenly develop serious symptoms. If the report is positive, he may be placed under treatment without delay. The examination also determines if it be necessary to kill other animals which have been bitten.

The routine examination of heads at the State Hygienic Laboratory consists of the careful removal of the brain, the making of smears from the hippocampus major, staining with Williams' modification of Mann's method, and careful search of from one to twenty preparations for Negri bodies. If the results are negative, one or two experimental animals, usually rabbits, are inoculated subdurally with an emulsion of the brain. If diagnosis is urgent, a guinea pig is inoculated, since that animal shows a very short incubation period—frequently only ten days.

The presence of Negri bodies is regarded as conclusive evidence of the disease. Negri believed them to be protozoa and the etiology of rabies, but this has been disputed. They are described as pink or red, oval, round, or irregular bodies, 0.5 to 23 or more microns in diameter, with small blue granules of basophilic nature, lying within the nerve cells. They may be found in all parts of the central nervous system, particularly in the large ganglion cells. In Ammon's horn (hippocampus major) they are found in the largest numbers and attain their greatest size, it is often found however, the more virulent the infection the smaller are the Negri bodies. In very virulent cases they may be so small it is difficult to recognize them and animal inoculation is resorted to. The infection travels along the nerve from the wound centripetally. When it reaches the brain and symptoms become manifest, the case may be regarded as practically hopeless.

The bite of any suspicious animal should receive immediate attention. To prevent absorption of the virus, the wound should be cauterized at the earliest possible moment with fuming nitric acid or the actual cautery. Open the wound and bathe freely with tepid water if convenient.

Bites about the face or any exposed surface, are more serious than bites through clothing. The nearer the source of infection to the central nervous system the more rapid will be the development of the disease, the shorter the period of incubation, and the more radical will be the treatment required. .

The incubation period varies with the severity and location of the bite, the virulence of the virus, and the species of the animal biting and bitten. In man the incubation is roughly stated as from 14 to 90 days; in dogs, 14 to 60 days, but may be as short as 6 days; in rabbits, 9 to 90 days; and guinea pigs 8 to 60 days.

The Pasteur treatment has reduced the mortality from rabies from about 16% in the untreated, to 1% or less, in the treated. It depends for its effectiveness upon the incubation period being sufficiently long for an immunity to be established before the onset of the symptoms. Failure may be due to the virulence of the infection, proximity

of the wound to the nerve centers, or delay in the administration of the treatment.

The treatment is described in N. N. R. (A. M. A.); as—"An emulsion of the cords of rabbits that have died as a result of the subdural injection of fixed rabies virus. The fixed virus is obtained by passage of rabies virus through a long series of rabbits until the animals die after a uniform period of incubation; this period may vary according to the strain of virus. The cords are removed from the rabbits and, as a rule, dried over potassium hydroxide for a period of from two to fifteen days.

"Antirabic vaccine is used for the preventive treatment of rabies. Emulsions of the cords are prepared with broth or saline solution and injected subcutaneously. The 'scheme of dosage' varies according to circumstances, but the general principle consists in daily injections, beginning with an emulsion of a cord dried for from 8 to 14 days, and gradually increasing until a 'two-day' cord is used." The fixed virus in general use is of the strain employed by the U. S. Hygienic Laboratory, Washington, D. C.

The treatment may be "mild," "medium," or "intensive," according to the location and severity of the bite. It includes the administration of from 21 to 25 injections, covering a period of 18 to 22 days. Beginning with an emulsion of cord that is only slightly virulent, the patient is inoculated daily with increasing strengths of the virus until his system has reacted to such a degree that it can withstand the stronger virus, and immunity is produced.

As prepared for administration, each section of cord of the requisite attenuation or virulence, is ground up with the aid of diluted glycerin, into an "emulsion" which is transferred to a small vial fitted with a rubber stopper. The vials are numbered consecutively and the doses given in the order in which they are numbered. As generally supplied, a syringe containing sterile salt solution accompanies each dose. The syringe is connected with the vial by passing the needle through the rubber stopper, the two liquids are mixed by passing them back and forth, and the vaccine is finally drawn into the syringe and is ready for use. The product is perishable and must be kept cool. Much care must be exercised in handling, especially the latter doses. As soon as the glass containers are emptied they should be boiled or otherwise disinfected.

The first day's treatment consists of three doses, given four or six hours apart; the second day, two doses are supplied, and the subsequent doses are given one each day until twenty-five doses have been administered. The site usually selected for injection is the subcutaneous tissue of the anterior abdominal wall. The site is prepared with alcohol and sterile cotton, and no after dressing is required. Some slight local reaction may follow the puncture.

Rabies is one of the most preventable of diseases. The enforcement of proper dog laws—the licensing and muzzling of dogs; the destruction or confinement of stray, ownerless animals; the strict enforcement of a six-months' quarantine on all dogs brought into the community, would practically eliminate the scourge.

The writer would express his indebtedness to the following, for much of the material contained in this paper:

The History, Prevalence and Prevention of Rabies and Its Relation to Animal Experimentation, by Langdon Frothingham, M. D. V. (Defense of Research Pamphlet No. 7; A. M. A.)

History of Rabies in Southern California, Stanley P. Black, M. D., and L. M. Powers, M. D., Los Angeles. (Cal. State Jour. Med., Vol. 8, Nov., 1910.)

Rabies in California, W. A. Sawyer, M. D., Berkeley, Cal. (Cal. State Jour. Med., Vol. 9, July, 1911.)

Rabies in a Human Being, with Post-Mortem, Henry Hanson, A. B., M. D., Jacksonville, Fla. (Jour. A. M. A., Vol. 57, No. 26.)

The Pasteur Treatment for the Prevention of Rabies. (Dr. H. M. Alexander Co., Marietta, Penn.)

Laboratory Procedure: The Cutter Laboratory, Berkeley, California.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of January the following meetings were held:

Medical Section, January 2, 1912.

1—Macroscopic Invisible Carsinosis of the Meninges. Dr. W. F. Beerman. Discussed by Dr. Milton B. Lennon. (This paper will appear in J. A. M. A.)

2—The Value of Much Granules and the Antiformin Method in determining the Etiology of so called Tuberculides with special reference to Lupus Erythematosus. Dr. David Friedlander. Discussed by Dr. René Bine and Dr. David Friedlander. (This paper will appear in the British Medical Journal.)

General Section, January 9, 1912.

1—Treatment of Severe Cases of Diabetes. Dr. Emile Schmoll. Discussed by Dr. Clarence Quinan, Prof. M. E. Jaffa, Dr. René Bine, Dr. C. G. Levison, Dr. W. S. Franklin, Dr. Emile Schmoll. (This paper is to be printed in J. A. M. A.)

2—Angio-Neurotic Edema: A Series of Cases with Clinical Observations. Dr. Harry I. Wiel. Discussed by Dr. Harry E. Alderson, Dr. Emile Schmoll, Dr. Harry I. Wiel.

Section on Surgery, January 16, 1912.

1—Demonstration with the Oesophagoscope of a Case of Carcinoma of the Oesophagus. Dr. Julius Rosenstirn.

2—Treatment of Carcinoma of the Cervical Lymphatics. Dr. Raymond Russ. Discussed by Dr. H. A. L. Ryfkogel, Dr. J. Henry Barbat, Dr. Emmet Rixford, Dr. Raymond Russ.

3—Retrocecal Appendicitis. Dr. C. G. Levison. Discussed by Dr. Emmet Rixford, Dr. A. Newman, Dr. Julius Rosenstirn, Dr. J. Henry Barbat, Dr. C. G. Levison. (This paper will be published in the Annals of Surgery.)

Eye, Ear, Nose and Throat Section, January 23, 1912.

1—Report of a Case of Sinus Thrombosis Due to Welch Gas Bacillus. Dr. E. D. Shortlidge.

2—Demonstration of a Case. Dr. Cullen F. Welty.

3—Rational Surgery of Retro-Bulbar Neoplasms, with relation of a Case of Cylindroma of the Orbit, extirpation of same and preservation of the Eye. (Illustrated with lantern projections.) Dr. P. de Obarrio. Discussed by Dr. Wm. F. Blake, Dr. Yard Hulen, Dr. P. D. Obarrio.

Section on Urology, January 30, 1912.

1—Periurethral Complications of Stricture. Dr. M. Silverberg. Discussed by Dr. A. B. Grosse, Dr. W. P. Willard, Dr. R. L. Rigdon, Dr. M. Silverberg. (This paper to be published in J. A. M. A.)

2—Presentation of Case. Dr. M. Krotoszyner. Discussed by Dr. M. Silverberg, Dr. Henry Meyer, Dr. R. L. Rigdon, Dr. M. Krotoszyner.

3—Presentation of X-Ray Plates. Dr. R. L. Rigdon.

4—Demonstration of Specimen of Prostate. Dr. Henry Meyer.

5—Demonstrate of Specimens of Bladder Tumors. Dr. M. Krotoszyner.

CALIFORNIA ACADEMY OF MEDICINE.

The California Academy of Medicine held its regular meeting on January 29, 1912, in the Library of the San Francisco County Medical Society.

Scientific program was as follows:

1—Differentiation of Influenzal and Septicaemic Meningitis. Dr. J. G. Fitzgerald. Discussed by H. C. Moffitt, G. E. Ebright and J. G. Fitzgerald.

2—Osteoplastic Carcinoma. Dr. A. L. Fisher. Discussed by Dr. Rusk, Dr. Stillman, Dr. Dickson, Dr. Eloesser, Dr. Russ, Dr. Moffitt, Dr. Ryfkogel and Dr. Fisher.

3—Demonstration of Fibromata of the Cervix. Dr. H. J. Kreutzmann.

A. W. Hewlett, Rupert Blue, G. W. McCoy, Alonzo Taylor, W. E. Garry and Geo. Blumer were unanimously elected to honorary membership. Sterling Bunnell was unanimously elected to regular membership.

Refreshments were served at the close of the meeting.

COOPER COLLEGE SCIENCE CLUB.

The Cooper College Science Club held its regular monthly meeting on February 5, 1912, at which the following scientific program was given:

1—A Case of Cancer of the Uterus. Dr. F. P. Topping. Discussed by Dr. Chester J. Teass and Dr. F. P. Topping.

2—Grafts. Dr. Dudley Tait. Discussed by Dr. Leo Eloesser, Dr. H. B. Graham, Dr. G. H. Taubles, Dr. Dudley Tait.

3—Cutaneous Reactions. Dr. Ernest D. Chipman.

The name of this society has been changed to that of the Cooper Clinical Society.

Refreshments were served at the close of the program.

SAN DIEGO COUNTY.

Dr. T. W. Huntington, President of the State Medical Society, was the guest of the San Diego County Medical Society at a dinner given January 18th at the Palace Cafe in San Diego. About fifty members were present. Dr. Huntington talked on the need of public lectures to the laity along preventive medical lines.

B. J. O'NEILL, Secretary.

SOLANO COUNTY.

Whereas, United States Senator Works of Los Angeles, Cal., has seen fit to air his personal and family troubles in the Senate chamber of the United States, in support of a cult of drugless healing and in depreciation of the medical profession at large and certain members thereof in particular whose names he refuses to make public, and

Whereas, The medical profession stands for the highest type of citizenship and scientific attainment; be it

Resolved, That the Solano County Medical Society does hereby protest against the use and prestige of the Senate of the United States of America for the furtherance of any cult or system of healing, drugless or otherwise, and that a copy of this resolution be spread upon the minutes of this society and a copy sent to the California State Medical Journal.

A. V. DORAN, Secretary.

BOOK REVIEWS

Infections of the Hand. By Allen B. Kanavel; 8vo, linen, pp. 447 and xiii. Lea & Febiger, Philadelphia and New York, 1912; price not stated.

A good book, containing thorough anatomical studies and sound clinical views and deductions. Of much practical import is the author's work on the anatomy of the tendon-sheaths, the bursae and the fascial spaces of the hand, with original plates based on injections and X-Rays. Valuable, as giving a clear oversight, are his diagrams of the various paths by which infections may spread over the hand.

The book is evidently intended as a work of reference; a good index aids in the finding of the anatomy, pathology and treatment of the particular lesion to which reference is desired. The subject-matter is of such importance, however, and the author's studies so thorough, that with a little rearrangement of the contents the work might be remodeled from a reference-book for the excerption of isolated chapters to one that would be of sustained interest from cover to cover. Ready study of the valuable plates of serial cross-sections of the hand is made impossible by the use of the antiquated letter-system for designating the various structures. Instead of printing in each plate full names with lines or arrows pointing to the parts designated, a system of letters (and, worst of all, cross-references) indicates the different details. Anatomical reading is difficult enough;—to have to cross and hunt and turn back again over several pages in order to ascertain that dots labeled EPTP, ESIP, etc., have nowhere an explanation of their mystic symbols, is indeed harrowing.

I hope that these deficiences in the technical make-up of the book may be corrected in the many subsequent editions that it deserves; they do not at all deduct from its intrinsic value. Kanavel's work is worth buying and studying by every surgeon and by every general practitioner. L. E.

Scientific Feature of Modern Medicine. By Frederic S. Lee, Ph. D. Published by the Columbia University Press, New York, 1911.

This volume of 176 pages is a reproduction of eight lectures delivered by Prof. Lee in New York City. The lectures were delivered to what was at least in part, a lay audience and were illustrated by figures, charts, etc., that, the author states, have been found impracticable to reproduce. This rather detracts from the value of the book for the layman. Also the book should have a glossary.

It is unfortunate that chapters one and two should be the dryest reading to the layman and the hardest for him to understand.

It is to be hoped, however, that the book will be read by those for whom it is intended for it is only by extension of knowledge of what medicine really is and what it can and cannot do, that quackery and charlatanism can be overcome, and though the author occasionally carries an idea a little far, still in the main the book is one that can be recommended by the profession to the layman who wishes to know something concerning scientific progress in medicine. A. L. F.

An Anatomical and Surgical Study of Fractures of the Lower End of the Humerus. By Astley Paston Cooper Ashhurst, A. B., M. D. 8vo. Linen. Pages 163. Lea & Febiger, Philadelphia and New York, 1910. Price not stated.

A careful study with many interesting X-ray plates. Ashhurst treats all his patients by the hyperextension method; he has secured perfect results (i. e., no limitation of motion and normal carrying angle at the elbow) in 81% of his cases. This, when compared with the 18-25% of perfect cures attained by other surgeons, surely repays the care and detail with which he has studied these fractures. König and others have recently shown that the remote results of fractures at the elbow may not be as bad as would appear from most statistics. Reabsorption of bone and the adaption of structure to function make the remote prognosis of children's fractures more favorable than it might seem from the status immediately after discharge from treatment. However this may be, Ashhurst has succeeded in showing that the gloomy prognosis generally accorded fractures at the elbow,

may under proper treatment be changed to a favorable one,—even as to immediate results. Of especial interest are the plates from anatomical dissections showing the replacement and retention of supracondylar fractures by the hyperextension position, and the plates of the fractures of the type "Posadas," before and after treatment. L. E.

TREASURY DEPARTMENT,

Bureau of Public Health and Marine-Hospital Service.

A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B street, SE., Washington, D. C., Monday, April 8, 1912, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

Candidates must be between 22 and 30 years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character.

The following is the usual order of the examinations: 1, Physical; 2, oral; 3, written; 4, clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography of the candidates. The remainder of the written exercise consists in examination of the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and natural sciences.

The clinical examination is conducted at a hospital, and when practicable, candidates are required to perform surgical operations on a cadaver.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority and after due examination, as vacancies occur in that grade.

Assistant surgeons receive $1,600, passed assitsant surgeons $2,000, and surgeons $2,500 a year. When quarters are not provided, commutation at the rate of $30, $40, and $50 a month, according to grade, is allowed.

All grades above that of assistant surgeon rereceive longevity pay, 10 per cent. in addition to the regular salary for every five years' service up to 40 per cent. after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C."

THE A. M. A. PRESS SERVICE TO NEWSPAPERS.

The following is a circular letter sent out by the Press Bureau of the Council on Health and Public Instruction to all the five thousand and more papers on its list. In many instances the papers published this letter in full. It will show you a little of the attitude and of the nature of the work of the association in connection with publicity.

535 Dearborn avenue, Chicago, Jan. 2, 1912.

To the Editor:

This is a circular letter. It has to be on account of the large number sent out. But it is as much a personal letter as though it had been written especially for you.

Attacks on the Association.

For some time past, the American Medical Association has been the subject of attack. Attempts have been made to mislead the public as to what it is and what it is doing. The newspapers themselves have originated very little of the "copy" used. It has been inspired by, and, in most cases, prepared by, those who have good reason to be hostile to the American Medical Association

An organization has recently arisen whose principal object seems to be to attack the American Medical Association under cover of opposition to proposed health legislation. This organization owes its origin to those who were and are being injured by the work of the Association.

The American Medical Association has no secrets. It has no desire to keep from the public what it is doing. On the contrary, it wants the public to know what it is doing. It will then be apparent why the Association has incurred the enmity of certain interests.

Frauds in Proprietary Medicines.

About six years ago, the Association established a chemical laboratory at its headquarters in Chicago. Competent chemists began a systematic investigation of drug preparations made by proprietary houses and sold to druggists to be used by physicians. The results of these investigations were made public from time to time, many frauds and dishonest methods were exposed. These investigations revolutionized the proprietary medicine business and have greatly diminished the profits of dishonest firms. This explains the antagonism of those proprietary medicine firms which were found to be employing dishonest and fraudulent methods.

Frauds in Patent Medicines.

The Association laboratory later took up the investigation of so-called "patent" medicines—i. e., those sold directly to the public—exposing many frauds by which the sick are swindled. This explains the antagonism of the patent medicine interests.

Frauds in Manufacture and Sale of Foods.

Five years ago, after years of effort, Congress passed a Federal pure food law, the National Food and Drugs Act. The Association had agitated this question for many years and was active in securing the passage of the bill. Since the law became effective, the Association has labored to secure its enforcement and to prevent its emasculation. This explains the antagonism of the manufacturers and dealers in adulterated and sophisticated food products.

Low Standard of Medical Education.

A few years ago, medical education in this country was in a condition that was not creditable to the medical profession; and—what is more important—it resulted in admitting to the practice of medicine men who were untrained and who were not fit to treat the sick. Eight years ago, the Council on Medical Education was created by the American Medical Association, and a thorough investigation of medical education was made. The facts revealed by the investigation were published, and a periodic inspection of medical schools was inaugurated. The results of these inspections are published each year. This explains the antagonism of the poorly equipped proprietary medical colleges.

This is only a part of what the Association has been and is doing. This work is altruistic, and in it the American Medical Association is spending thousands annually.

Many frauds and ancient swindles have been brought to light; quacks and quackery have been exposed; the fat profits of deception and chicanery have been jeopardized. The Association has incurred the hatred of medical fakers, fraudulent medicine makers and food adulterators, worthless medical schools and those medical journals which have subsisted largely on the advertising of fraudulent medicines.

Honest Criticisms Welcomed.

Not daring openly to oppose the work of the Association, these interests, by subterfuge and by arousing sectarian and partisan prejudices, have endeavored to mislead the public. The Association has been denounced as a "medical trust," as dominated by a band of self-seeking, unscrupulous "political doctors." Yet none of this abuse of the Association would have occurred had not the profits of dishonesty been attacked. We recognize that many sincere and honest people have been misled by the attacks upon the Association and have joined in the opposition to the Association, not understanding either the work which the Association is doing or the reasons for the antagonism to it. We welcome sincere criticism and ask only that an impartial investigation be made, and that the facts be known before the Association and its work are condemned.

It is believed that few newspaper editors would have allowed many things to go into their columns that have gone in had they known the actual facts or had they understood the animus of the "telegrams," "letters" and "special articles" that have come to their desks.

The Public Should Know the Truth.

We are writing to you because we want you and every newspaper editor to know the facts. For this reason, we are sending you, under separate cover, a few of the pamphlets issued by the Association. Most of these articles first appeared in The Journal of the American Medical Association, which goes each week to over 56,000 physicians. These pamphelts have been and are being distributed in large quantities to the public for the education of the people.

We ask that you give the Association and its work consideration, in the interest of the public, and especially of public health, for we believe that you will agree with us that this work is worth while.

We repeat: The American Medical Association has no secrets. On the contrary, it desires the public to know what it is doing, and especially it desires the press of the country to know why it is being attacked. It has no apologies to offer for its work. On the contrary, it is proud of the enemies it has made. It intends to continue its work until every medical fraud in the country, big and little, which exploits the sick, has been exposed and the evidence placed before the people. It invites the most searching investigation of its methods, aims and works. The more that is known of what the Association is doing, the greater will be the support and approval accorded to it.

Press Service.

We shall also be glad to send you, each week, extracts from the publications of the Association regarding public health, that will be of interest to your readers. We shall be glad to have vour interest and co-operation in the education of the public on sanitary matters.

Hoping that you will take sufficient interest in our work to glance through the matter sent you under separate cover, we remain

Very truly yours,

THE COUNCIL ON HEALTH AND PUBLIC INSTRUCTION.

Henry B. Favill, Chicago, Chairman.
J. N. McCormack, Bowling Green, Ky.
H. M. Bracken, St. Paul, Minn.
W. C. Woodward, Washington, D. C.
W. B Cannon, Boston, Mass.
Frederick R. Green, Chicago, Secretary.

P. S.—We are sending you under separate cover the following printed matter:

A pamphlet containing editorials from The Journal of the American Medical Association, and from leading dailies, explaining the opposition to the National Department of Health.

One of our pamphlets exposing fraudulent "Cancer Cures."

One of our pamphlets exposing fraudulent "Consumption Cures."

One of our pamphlets exposing quack "Medical Institutes."

IGNORANCE—AND GRAFT.

A letter on stationery headed "Connelley Liquor Cure," dated Oakland and signed (in typewriting) "H. R. Connelley, Prop.," has kindly been sent to the Journal. It is interesting and almost refreshing. Here it is, exactly as written:

"Inclosed find price list and list of referance they is a deduction of $25.00 on every case that the Dr., brings or sends and the Dr. can donate it to the patient or he can keep it him self just as he likes but if the Dr. keeps it ist is strictly confidential. H. R. Connelley, Prop."

Is not that a nice sort of business? And probably there are physicians who would really send a patient to such a place and really take the dirty $25.00!

FAITH OR FACT.

(An editorial in the Fresno Republican, Feb. 5th, 1912.)

In the name of "Medical Freedom" we protest! Mrs. Linda Burfield Hazzard, the "starvation doctor," of Port Orchard, Washington, has been convicted of manslaughter for starving a patient to death. To be sure, the patient was rich and Mrs. Hazzard was after her money. But covetousness and fraud are not murder. The conviction in this case was not for the motive, but for the killing. And the verdict means that starvation may kill people, even when administered by a healer of a sect which uses it as a curative agent. Shall matters of faith, like that, be determined in the criminal courts?

All "allopaths" believe that food sustains life. Therefore the notion that starvation will kill is an "allopathic" dogma, and any attempt to force it by law is an effort to establish one medical sect above the others. We tolerate one sect which teaches that a drop of lobelia dissolved in six thousand barrels of water, can make each spoonful of that water a more potent remedy than a spoonful of the lobelia would be. Shall we forbid the sect which teaches that a spoonful of asparagus juice is a more sustaining diet than a pound of beef? Sick people have got well by stopping their medicine. Therefore, reasons one school of healing, the way to abolish disease is to stop everybody from taking medicine. Sick people have also been known to get well after stopping food. Shall we therefore not allow one sect to conclude that the way to keep everybody well is to abolish food? The relation of food to life is no better authenticated than the relation of medicine to life. If it is murder to let a patient die for lack of food, it might be murder to let a patient die for lack of medicine. And that would abolish all "medical freedom."

Either there is such a thing as medical knowledge or there is not. The contention of the advocates of "medical freedom" is that the whole ques-

tion is one of dogma, in which one creed has as good a right as another. If we accept this assumption, we must follow it wherever it leads. And we can not reject a creed merely because it seems to us fantastic. The starvation cure is no more contrary to the accepted conclusions of human experience than the Christian Science cure is. And starvation is at least as likely to cure rheumatism as "absent treatment" is to cure strangulated hernia. An ounce of strychnine is quite as likely to be wholesome food as a "tenth decimal potency" is to be an effective remedy. If one practitioner may treat appendicitis by dislocating the eighth lumbar vertebra, why may not another treat strabismus by drowning the patient? Let us not shrink from our logic. Faith has no bounds and no laws. In matters of faith all things are tolerable. If the care of the sick is all a matter of creed, then surely there can be no murder in following what we think is the wrong creed. If the patient dies, appeal the case to the Supreme Court for reversal. Surely a typhoid bacillus has no rules which the Supreme Court can not amend. Mrs. Hazzard has as good a right to treat debility by starvation as Dr. Schmierkase has to treat typhoid with limburger and kraut. The only objection to either treatment is that it is fatal. And the League of Medical Freedom has abundantly demonstrated that it is no business of the law whether treatments are fatal or not. Every man has the right to die by his own "school."

Let us therefore once more protest, in the name of "Medical Freedom" against any verdict which sets up the mere opinion of a jury that starvation can kill, or the mere fact that starvation did kill, as against a theory that it will cure. Down with facts! What we want is consistency.

NEW AND NON-OFFICIAL REMEDIES.

Since publication of New and Non-Official Remedies 1912, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Non-Official Remedies":

Lactic Bacillary Tablets-Fairchild are made from a practically pure culture of the Bacillus bulgaricus. They are designed for internal administration in the treatment of intestinal fermentative diseases by the Bulgarian bacilli, with the design of accomplishing the acclimation of the bacilli in the alimentary tract, so as to secure their characteristic action against putrefactive fermentation by the production of lactic acid. One or two tablets before or after meals. The diet should not contain an excess of proteid, but should afford sufficient sugar. Fairchild Bros. & Foster, New York (Jour. A. M. A., Jan. 20, 1912, p. 191).

Salvarsan (Arsenphenol-amin hydrochlorid, arsenobenzol, "606") is 3-diamino-1-dihydroxy-1-arsenobenzen hydrochlorid, $HC_1NH_2.OH.C_6H_3As{:}As.C_6H_3OH.NH_2.HCl+2H_2O$, corresponding to 31.57 per cent. arsenic (As). It is marketed in hermetically sealed tubes each containing 0.6 Gm. (10 grains) Salvarsan. Salvarsan is a yellow, crystalline, hygroscopic powder, very unstable in air. It is readily soluble in water, yielding a solution with an acid reaction. The addition of sodium hydroxid solution to an aqueous solution of salvarsan precipitates the free base ($NH_2.OH.C_6H_3As{:}As.C_6H_3.OH.NH_3$) which redissolves when more alkali is added.

It is given to adults in doses of 0.3 to 0.6 Gm. (5 to 10 grains); for children the dose is from 0.2 to 0.3 Gm. (3 to 5 grains). In infants doses of from 0.02 to 0.1 Gm. (1/3 to 1½ grains) may be used. For a subcutaneous and intramuscular injection a suspension in a neutral fluid is commonly employed. This suspension is prepared as follows: The weighed amount of salvarsan is triturated with 0.35 Cc. normal sodium hydroxid solution to each 0.1 Gm. salvarsan. To this liquid a solution of 0.1 Cc. of normal sodium hydroxid solution for each 0.1 Gm. of salvarsan in 8 Cc. of sterile water is added drop by drop until the liquid is exactly neutral to litmus paper. If the neutral point is passed the excess of alkali must be carefully neutralized by a weak solution of hydrochloric or acetic acid. Subcutaneous, salvarsan may also be administered in form of oily suspensions.

These suspensions should be injected at once, using a syringe with a very thick platinum needle.

For intravenous injection a clear alkaline solution is prepared as follows: The weighed quantity of salvarsan is triturated with 0.7 Cc. normal sodium hydroxid solution for each 0.1 Gm. of salvarsan and then more of the alkaline solution is cautiously added until complete solution occurs.

This solution is diluted with from 100 to 250 Cc. (3 to 8 ounces) of sterile physiologic salt solution (0.9 per cent.) and filtered through a sterile filter.

The contents of a tube should be used at once after opening and under no circumstances should the contents of a tube damaged in transportation or any remnants of the powder from previously opened tubes be used. Victor Koechl & Co. (Jour. A. M. A., Jan. 20, 1912, p. 191).

Since January 1 the following articles have been accepted for inclusion with New and Non-Official Remedies:

Lactic Bacillary Tablets (Fairchild Bros. & Foster).

Salvarsan (Victor Keochl & Co.).

Neisser Bacterin Mixed (H. K. Mulford Co.).

Pneumo-Bacterin Mixed (H. K. Mulford Co.).

Scarlatina Bacterin (H. K. Mulford Co.)

Typho-Bacterin Mixed (H. K. Mulford Co.).

Rabies Vaccine (H. K. Mulford Co.).

Widal Test, Borden's Modification (H. K. Mulford Co.).

Von Pirquet Test for Tuberculosis (H. K. Mulford Co.).

Gynoval (Farbenfabriken of Elberfeld Co.).

Bass Test for Typhoid Fever (H. K. Mulford Co.).

COMMITTEE ON PAPERS, C. Ph. A., ISSUES CALL.

At a meeting of the committee on papers of the California Pharmaceutical Association, held at the office of the chairman, Dr. A. S. Musante, 360 Columbus avenue, San Francisco, it was decided to issue this call for papers to be read at the next annual convention to be held at the historic city of Monterey in May. It is desired that this "call to arms" shall stimulate prospective authors to action, so that long before President G. H. P. Lichthardt calls the members to order we will have prepared the best list of papers on current pharmaceutical matters that has ever been presented to the members of the profession before.

Those who accept this invitation are asked to communicate their titles to the chairman, whose address is as above, so that with the proper publicity no duplication will occur. Start in right away, so you will not be rushed but will have lots of time to thoroughly review your essay, making it, in this way, an object of interest to those who attend the meeting.

If you have not the time or inclination to write a paper, help along by suggesting some topics of importance for others. The following subjects have already been suggested as titles for those who are inclined to write but have no choice as yet in the matter of suitable topics: "Contracting for 'Lodge Prescriptions,' Evils of"; "Sunday Closing"; "Co-operation with Physicians"; "Prescription Problems"; "Higher Pharmaceutical Education"; "Store Experience vs. College Education for Future Pharmacists"; "The Role of Women in Pharmacy," and "Needed Pharmaceutical Legislation."

CHANGES OF ADDRESS.

Anderson, J. G., from Petaluma to San Francisco.

Hieronymus, Arthur, from addresses unknown to Alameda, Cal.

Bancroft, I. R., from 2314 Lota street, Los Angeles, to Lankershim Bldg., Los Angeles.

De Ville, Leon, from addresses unknown to American National Bank Bldg., San Diego, Cal.

Wrenn, Jos. T., from San Francisco to 274 Abby street, Fresno, Cal.

Nusbaum, Adolph, from addresses unknown to 865 Fillmore street, San Francisco.

Carter, M. G., from San Leandro to 1638 Cimarron street, Los Angeles, Cal.

Curtis, Elliott D., from Woodland to 577 Fourteenth street, Oakland, Cal.

McNeile, L. G., from 3837 So. Hill street, Los Angeles, to Auditorium Bldg., Los Angeles.

Hickey, Jno. Philip, from 456 Haight street, San Francisco, to 2790 Harrison street, San Francisco.

Jackson, Craven, from San Fernando Bldg., Los Angeles, to California Bldg., Los Angeles.

Avery, Norman M., from San Francisco to Essalon, Cal.

Walters, H. S., from Arroyo Grande, Cal., to Union National Bank, San Luis Obispo, Cal.

Schaller, W. F., from addresses unknown to San Francisco.

Gallison, F. E., from Mt. Boullion to Merced Falls, Cal.

Stephens, C. P., from Grimes, Cal., to Pinole, Cal.

Holland, J. A., from San Andreas to Hayward, Cal.

Muller, A. C., from Hammonton to 214 Haight street, San Francisco.

Dodsworth, Robert. M., from Azusa to 451 W. Ocean street, Long Beach, Cal.

Pomeroy, J. L., from Pottenger Hospital, Monrovia, to American National Bank Bldg., Monrovia.

Hansen, Agnes Emilie, from Lodi, Cal., to Los Gatos.

Soothill, Jno. H., from Anderson, Cal., to 114 Seabright avenue, Santa Cruz.

Tupper, R. B., from St. Luke's Hospital to 297 Church street, San Francisco.

Newman, Lester, from German Hospital to 209 Post street, San Francisco.

Leonard, J. V., from Mexico to 2370 Mission street, San Francisco.

Jardarola, L. S., from San Francisco to ——?

Crepin, E. A., from Glen Ellen to Alhambra.

Bryant, F. J., from 126 Stockton street, San Francisco, to Soledad, Cal.

Bingaman, E. W., from Soledad to ——?

Hunter G. R., Eighth avenue and Twenty-first street, Los Angeles, Cal.

Low, S. P., from 1220 State street, Santa Barbara, to 9 W. Victoria street, Santa Barbara.

Maine, A. F., from Peralta Apts., Oakland, to Thayer Bldg., Oakland.

Ray, J. T., from San Francisco to ——?

Griffin, A. P., from Sutter Creek to Los Banos, Cal.

Dietz, H. L., from 1111 Washington street, Oakland, to 1634 Eighth street, Oakland, Cal.

Falk, Eugene V., from Shively to 922 I street, Modesto, Cal.

Quinn, Wm., from 1542 Thirteenth street, San Francisco, to cor. Thirteenth and Railroad ave., S. F.

Leffler, John, from 1911 Sutter street to Pacific Bldg., San Francisco.

Tillotson, C. A., from Holtville to Coalinga, Cal.

Anderson, C. A., from San Ysabel, Cal., to Hooper, Cal.

Freeman, C. M., from San Francisco to Stockton, Cal.

Ball, J. D., from Central Bank Bldg., Oakland, to Thornhill Road, Oakland.

Chambers, J. D., from Grant Hotel, San Diego, to ——?

Jackson, Jas. A., from Scripps Bldg., San Diego, to ——?

Rajotte Fabre, E. C., from Lincoln, Cal., to Paris, France.

Cohn, David, from Fairmont Hotel to 1404 Sutter street, San Francisco.

Baker, Charlotte J., from San Diego to Point Loma, Cal.

Baker, Fred, from San Diego to Point Loma, Cal.

Hileman, J. E., American National Bank Bldg., San Diego, Cal.

Nielsen, J. C. E., from Los Angeles to San Diego, Cal.

Armstrong, G. C., from Chicago, Ill., to San Bernardino, Cal.

Ohrwall, H. W., from addresses unknown to Ciennaga, Cal.

Magnus, M. E., from 648 Hayes street to 635 Hayes street, San Francisco.

Kergan, J. F. C., from 1449 Post street, San Francisco, to ——?

Mouser, S., from San Francisco to ——?

Bush, B. H., from Oakland to Santa Cruz, Cal.

Wolfsen, L. H., from Merced, Cal., to Chicago, Ill.

Matlock-Vanderpool, Mary F., from Eugene, Ore., to 204 W. Sixth street, The Dalles, Ore.

Morris, C. A., from addresses unknown to 2128 Chestnut avenue, Bakersfield, Cal.

Topham, B. E., from 1249 Grand avenue, Los Angeles, to Sagus (P. O., Surrey, Cal.)

Michaelson, Lewis, from Livermore to 2735 Webster street, San Francisco.

Kessing, J. J., from addresses unknown to 716 Jefferson street, Oakland.

Vance, Allen H., from Santa Cruz to Sausalito, Cal.

Anderson, Annie M., from Mill Valley to ——?

Sweet, Anna E., from San Anselmo to ——?

McNary, Wm. Thos., from 66 E. Santa Clara avenue, San Jose, to New Century Bldg., San Jose, Cal.

Sampson, J. H., from Garden City Bank Bldg., San Jose, to Thayer Bldg., Oakland, Cal.

Prather, D. J., from addresses unknown to Modesto, Cal.

Jamieson, E., from Grass Valley, Cal., to 1528 Eighth avenue, East Oakland, Cal.

NEW MEMBERS.

Cottrell, Chas. C., Scotia, Cal.
Bryan, Lloyd, Eureka.
Long, S. M., Fresno.
Lemon, F. J., Kerman.
Manson, Guy, Fresno.
Armstrong, G. C., San Bernardino.
Rubel, W. A., Loma Linda, Cal.
Taylor, H. N., Maricopa, Cal.
Look, H. H., Sacramento, Cal.
Stevenson, G. L., Sacramento, Cal.
Voisard, F. X., Sacramento, Cal.
Dower, Wm. H., Halcyon, Cal.
Wade, L. T., San Luis Obispo, Cal.
Atkins, M. H., Burlingame, Cal.
McGinty, A. T., San Jose, Cal.
Bell, W. L., Santa Cruz, Cal.

RESIGNED.

Bullington, P. F., Chico, Cal.
McMullin, Smith, Petaluma, Cal.

DEATHS.

Kisner, Thos. J., San Francisco.
Rowland, P. Demott, Hilcrest, Cal.
Draper, E. M., Pasadena, Cal.
Leib, T. N., San Francisco.
Cassity, S. O., Snelling, Cal.

California State Journal of Medicine.

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Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. X APRIL, 1912. No. 4

FORTY-SECOND ANNUAL MEETING

STATE MEDICAL SOCIETY,

DEL MONTE,
APRIL 16TH, 17TH AND 18TH.

PROGRAM
PAGE 135.

GOING?

RECORD YOUR CERTIFICATE.

To practice medicine legally in this state you must first get a license from the State Board of Medical Examiners and then have that license, or certificate, recorded in the county in which you reside and practice. The recording of the license is made as much a part of the law as the getting of it, and it is just as important. The Board of Examiners has found that this provision of the law has been very generally overlooked by a considerable number of physicians. This is wrong and it greatly interferes with the work of the Board in looking up illegal practitioners. It has therefore been decided to enforce rigidly this provision and after due warning has been given, to arrest such licensed physicians as have not complied with the law in this particular. If you have not had your license recorded, attend to the matter at once or you may be one of those to be arrested; you never can tell.

A COUPLE OF FAKES.

Once more the thought comes to mind that there must be a good many very credulous (and shall we say ignorant?) members of our profession, or else there are many foolish manufacturers trying to foist worthless stuff upon us. All of which is caused by two pieces of recently received so-called "literature"—a beautiful word used by the manufacturer to designate the advertising stuff he sends to trusting and confiding doctors. The envelope of one such morsel is decorated with this: "Epilepsy Proofs of Cures New Powerful Agent. Half pint sample to every physician express prepaid." Looking inside we find the nostrum is "bromo adonis" (catchy name!) and that the "proofs of cures" consist of a number of letters from physicians and others testifying to the wonderful results obtained with this particular nostrum. That is going some for twentieth century medical science, but it is not quite up to the mark; it is rather "old stuff" and cheaply gotten up "literature." The Vanadium Chemical Co. goes them several better in the other document referred to. This is, in appearance, a typewritten letter setting forth the more than wonderful virtues of "vanadiol." In this we get some real up-to-the-minute twentieth century science as she is scienced. We are charmed to read, and quite a bit flattered at the fact that our profound learning is known to all, that "You, of course, realize the value of active oxygen in the blood stream." To be sure, we had had a kind of indefinite notion that "active oxygen in the blood stream" would sort of mess it up a bit. Evidently, however, our knowledge was out of date, for surely a manufacturer would not say such a thing if it were not true; someone must have made some very marked advances in physiology of which we had not heard. After we have plenty of "active oxygen in the blood stream" all our troubles will be over; we will have nothing more to fear—or to hope!

EDDYISM FLIP-FLOP.

It is mighty comfortable to have something very vague and illusory to stand upon, for then you may change your attitude and shift your position with the minimum of effort and each new pose will seem quite as real as any of the old ones, because the very vagueness imparts an air of stability and in many long words there is much confusion. If you really do not know exactly what you are believing but just believe something, why then it does not matter much how you change the phraseology. Some years ago it was a fundamental pronouncement of eddyism, as nearly as any sane person could understand any of the fantastic pronouncements of that entertaining cult, that there was no such thing as disease; that everything that went wrong with an individual was due to some error of thought, or something equally satisfying and vague. As witness the now almost forgotten White Plains case in New York where a child died without medical care—but with ample eddyite assistance—and a prosecution resulted. The very existence of disease was denied by the entertaining eddyites. Now, however, things have had to be changed. There has been a great object lesson to the world in the sanitation, first of Cuba and more recently of the Canal Zone, and the more wideawake of the eddyites have recognized the fact that they cannot fool the whole world into believing that all sickness is merely "mental error" in view of these facts as demonstrated in a highly commercial and satisfactory way. Therefore they have decided that some diseases do exist and will continue to exist as long as anybody remains alive who is in error. Of course it is understood that any one is in error who does not believe all the beautiful and fanciful nonsense uttered by the deliciously commercial eddyite. This situation would be amusing even to an eddyite if he had a logical mind and a sense of humor; but as that is axiomatically impossible, let it pass. In an official communication from a gentleman by the name of Farlow to the New York *Sun,* he says, in small part: "In the case of strange or suspicious diseases the Christian Scientist acts exactly as those laymen do who are not Christian Scientists, namely, when necessary they call in a proficient medical diagnostician and abide by the legal regulations relating to such cases." Is this a really truly flip-flop, or is it merely a bunch of words? Have they decided that there are really some diseases or only some "strange or suspicious" new forms of mental error? Eddyites have been in the habit of calling in physicians—but generally it was to keep the case from the coroner. It is all quite amusing.

MORE "STATE MEDICINE."

With the growing complexity of our civilization comes a need for standardization. The microscopist buying a German lens for his American instrument expects to find the screw threads standardized. The San Francisco mother traveling with her young child, expects to secure as "certified milk" in New York, an article not differing widely as to bacterial count and chemical composition from the California product. The two bacteriologists who made counts from these widely separated milk supplies, used agar plates made according to standard methods. In almost every examination conducted in a hygienic laboratory a standard method is employed which has been formulated by a committee of the American Public Health Association. It has remained, however, for California to extend the idea of standard methods from the laboratory to general sanitary procedure. The State Board of Health has recently appointed a committee to be known as the "Committee on Standard Methods of Public Health Administration." The membership of this committee is state-wide in distribution, and consists of city and county health officers, a bacteriologist, a lawyer, and a sanitary engineer. With our existing health laws as a basis this committee hopes to report to the State Board of Health a code of regulations which will standardize and simplify the work of health officers throughout the state. Such codes have been prepared by several states, but so far as can be learned this is the first instance of the work being delegated to a committee chosen from the health officers themselves. The State Board of Health is to be congratulated on attempting this work which is certainly at the forefront of progress along modern lines of public health administration.

J. N. F.

NEW YORK STATISTICS.

A glance at the vital statistics of New York State for the month of December (accidentally chosen but probably a fairly average month) is quite interesting. The report is so arranged as to give a comparison between the urban and the rural births and deaths. The urban is approximately three times the rural population and the total deaths have about the same ratio; three to one. The births, on the other hand, are nearly one to five; urban 14,926, as against 2,807 rural. As would be expected, the deaths under one year of age are very much more numerous in the cities than in the country; nearly eight to one; between one and four years the city takes ten times the death toll that the country does and it maintains a larger percentage until the age of 60 and over, when it drops to about one and one-half to one. City life is strenuous; it grinds remorselessly for sixty years and even between 40 and 59 it kills five times as many as does the rural habitat. Probably the drop in the superiority of the urban death rate in those over 60 is illustrative of the survival of the fittest; all those who could be killed off had been; only those superlatively tough could reach that age and live in New York City anyhow!

ANOTHER WHY?

Last month the JOURNAL published some editorial notes relating to distinguished physicians who had contributed articles to publications which continue to advertise nostrums and frauds that have been shown up. These remarks have created some little comment which, so far as it has come to the attention of the JOURNAL, has been entirely favorable. We shall continue to refer to the subject from time to time. In the *American Journal of Urology* for February, 1912, there is an article by Dr. M. Krotoszyner, a distinguished physician of San Francisco and for many years a prominent member of our Society. In the same issue of that medical (?) journal are to be found the following advertisements: Ergoapiol, antiphlogistine, glycothymoline, peptomangan, glycoheroin, antheol and dioradin. The list is not so large as some, but that is probably because the publication is a special one and doubtless has but a limited circulation. Does Dr. Krotoszyner know anything about the things that that journal advertises? Does he not know that ergoapiol is advertised in the newspapers; has he ever looked at the label on a bottle of glycothymoline; has he not read the exposures of the peptomangan "literature" by the A. M. A.? Surely he must be conversant with these things, but he doubtless does not realize that the publication in question carries such advertisements. He certainly would not intentionally do anything to injure the excellent work that the Association is doing through the Council on Pharmacy and Chemistry, and yet that is just what he is doing, unthinkingly, by contributing to or subscribing to a publication that will advertise these things.

A PROUD SOCIETY.

The Ramsey County (Minnesota) Medical Society must be a large, strong and proud organization and the members must consider it a distinct honor to belong to such a scientific body. It publishes a monthly medical journal known as the "St. Paul Medical Journal"—or, at least, there is at the bottom of the cover of the journal of that title, the following imprint: "Edited and published by the Ramsey County Medical Society, Saint Paul, Minnesota." It must be a great encouragement to the A. M. A. in its efforts to make the profession a little cleaner, to see the way the Ramsey County Medical Society helps along the work. The issue of this county society's journal for March contains, among others, the following choice advertisements: Grays glycerine tonic; hydroleine; papine; katharmon; Kutnow's powder; iodoneen; carabana; glycothymoline; bovinine; sal hepatica; pepto-mangan; listerine; ergoapiol; antiphlogistine; postum; fellows hypophosphites; fig syrup; pasadyne and glycoheroin. Do the members of the Ramsey County Medical Society really want to be decent, collectively? It is hard to say.

NEWS ITEMS OF INTEREST.

Elsewhere in this issue of the JOURNAL will be found some columns of news items. These are taken from press clippings from papers in California, Nevada and Honolulu, and they present several things of more or less interest. First, let it be said, that the attempt is not made to run "personals"; this is rather an experiment in the way of trying to set forth, briefly, sundry items that may or may not be personal but that have, or seem to have, some general interest aside from the merely personal one. It appears that smallpox is, speaking geographically and not numerically, pretty widely distributed throughout the state, and further, that the new vaccination law does not seem to be quite so satisfactory to the antivaccinationists as they thought it would be. That was about what was to be expected. They are just like the howlers against any form of public health bill; they all say the same thing. "Let us have *proper* regulation." But when you come right down to brass tacks, you find that any sort of regulation that really regulates, is considered by them to be not "proper." They merely want empty words and not anything that positively does something. We also see from looking over the material that the papers are printing, that a good many of them are using the copy sent out each week by the Press Bureau of the A. M. A. Quite a few papers are using this copy for editorials and a number of others are printing it merely as "readers" or news items. That is a good sign, and another good sign is to see the number of public meetings or club meetings where lectures or addresses are given by medical men on various medical or public health subjects. This, again, is the right sort of work in the right direction; all that we, as physicians, can do is to tell the people the facts and then let them weigh these facts against other people's dreams or ideas; in the end they will decide right.

CHINOSOL APPROVED.

In any fight for a good cause, to make a mistake and hurt an innocent party does the just cause a great deal of harm; more harm than many of those who are opposing it could ever do. For this reason the Editor wishes to express the keenest regret that, inadvertently and carelessly, "chinosol" was included in a list of nostrums mentioned in the March JOURNAL. Long before the Chinosol Co. had discovered the fact and called our attention to it, a correction had been prepared and will be found on another page of this issue. This was written voluntarily and with only the feeling that an injustice had been done. Whether our words would hurt the Chinosol Co. or not is a question; but to allow an error of this sort to go by without the very fullest correction would certainly hurt the effort to secure honesty of manufacture in medicinal articles. If a manufacturer is willing to submit his product to the Council on Pharmacy and Chemistry, to comply with their rules and to be perfectly honest with the medical profession, he certainly should

get the support and the confidence of the profession and of the medical press and not abuse, accidental or otherwise.

This is the first instance since the organization of the Council that an article approved by it has been referred to in this JOURNAL as a "nostrum" or in any such way criticised, and if care will prevent it, it will be the last. Every one who knows this JOURNAL or its editor knows that it is our one desire to encourage the Council and the manufacturers who submit their products to it. On page 53 of New and Nonofficial Remedies (1911), we find, referring to chinosol, the following:

> "Actions and Uses. So far as experimental evidence goes, chinosol is non-toxic. It is a powerful antiseptic equal in this respect to mercuric chloride and considerably stronger than phenol. It exerts an antiseptic action in solutions containing one part to 5,000. It is a feeble germicide, being weaker than phenol and much weaker than mercuric chloride."

HYDROPHOBIA.

Interest in rabies has been greatly intensified by its suddenly becoming prevalent in San Francisco. During the month of February many dogs developed the characteristic symptoms and a number of human beings were bitten. Proof of the presence of rabies was secured in many cases by the demonstration of Negri bodies in the ganglion cells of the brain tissue, and in some instances by the production of the disease in laboratory animals, through inoculation. The examinations were made in the State Hygienic Laboratory in Berkeley, in the Laboratory of the San Francisco Health Department, and in the Laboratory of the Letterman General Hospital at the Presidio.

The State Board of Health has done much to minimize the number of human deaths by providing Pasteur treatment with United States Government virus for the people who have been bitten by rabid animals and are unable to be immunized at their own expense. Fortunately most of the people needing treatment are receiving it, but there are a few who listen to irresponsible talk about "hysteria," "phobias," and "imagination," and are influenced to take their chance with the disease. The first human victim of those who, from lack of knowledge or from design, are stating that the disease is merely a mental state produced by fear is at this writing passing through an agonizing death-struggle in one of the San Francisco hospitals. After being bitten while trying to treat his own dog, obviously ill with rabies, this patient talked with acquaintances who told him that the disease in human beings was merely imagination. The man was persuaded against taking treatment. Four and a half weeks later the spasms in his throat commenced and nothing could be done for him except to lessen the agony of the few remaining days of life.

The disease in San Francisco is but a small part of the epidemic which has been increasing in California during the last two and a half years. Rabies retains its foothold in Southern California and is now prevalent in the San Joaquin Valley from Bakersfield to Modesto. The number of dogs which have succumbed to the disease is estimated in the thousands. Cattle, horses, and hogs have received the infection from dogs. Several hundred persons have taken the Pasteur treatment to prevent the development of the disase after the bites of rabid animals. In California, eight persons have died with the typical symptoms of rabies.

Now a direct word to physicians: You are the authorities on health matters in your own communities and you can easily assist or greatly hinder measures for the control of rabies. There is only one feasible and successful method of controlling it and that is by the muzzling of all dogs at large so that they cannot bite each other. The physician who freely states that he has never seen a case in California and that therefore he does not believe the disease exists in the state, and the doctor who exercises his imagination devising popular substitutes for tried and efficient methods of control, make it almost impossible to produce rational legislation with regard to rabies. If physicians will inform themselves regarding this disease, new to California, it will soon be put under control through the steps obviously necessary for the protection of animals and human beings.

W. A. SAWYER.

DEL MONTE

APRIL 16TH, 17TH, 18TH.

WILL YOU BE THERE?

PROGRAM STATE MEDICAL SOCIETY

Del Monte, April, 16, 17, 18, 1912

FIRST DAY.

Tuesday, April 16, 1912.

Morning Session.
9:30 A. M.

President's address and reports of committees.

A State Organization for the consideration of public and personal hygiene.

Discussed by Drs. A. E. Osborne (Napa), J. H. Parkinson (Sacramento), Ross Moore (Los Angeles), and others.

During the morning those interested in the Eye, Ear, Nose and Throat specialties will meet at some convenient time for the purpose of perfecting the organization of a section and requesting its official recognition by the State Society.

Tuesday Afternoon, 1:30 o'Clock.

Symposium on Poliomyelitis.

1. Advances in our Knowledge of Poliomyelitis Gained by Animal Experimentation.
   Prof. Hans Zinsser (Stanford). By invitation.
2. Two Cases of Poliomyelitis.
   Dr. T. M. Williams (Palo Alto).
3. The Early Diagnosis of Poliomyelitis.
   Dr. R. L. Wilbur (San Francisco).
4. The Clinical Features and Neurological Findings in Anterior Poliomyelitis.
   Dr. Thos. J. Orbison (Los Angeles).
5. The Surgical Aspects of Infantile Paralysis.
   Dr. James T. Watkins (San Francisco).

Discussion by Dr. Harry M. Sherman (San Francisco).

6. Tuberculides as Observed in Southern California.
   Dr. Ralph Williams (Los Angeles).
7. The Diagnosis of Tuberculosis of the Skin.
   Dr. D. Friedlander (San Francisco).
8. Diagnostic Value of the Pastia Sign in Scarlet Fever.
   Dr. G. H. Taubles (San Francisco).

Tuesday Afternoon, 1:30 o'Clock.
April 16, 1912.

(In a separate meeting room.)

Eye, Ear, Nose and Throat.

9. Chairman's Address: The Present and Future of the Eye and Ear Section of our State Medical Society.
   Dr. William H. Dudley (Los Angeles).
10. The Causes of Maldevelopment of the Jaws.
    Dr. Robert Dunn (San Francisco).
11. Effect of Maldevelopment of the Jaws on Nose and Throat.
    Dr. Roscoe A. Day (San Francisco).
12. Effect of Maldevelopment of the Jaws on the General Economy.
    Dr. Allen H. Suggett (San Francisco).
13. Consideration and Treatment of Some Common Diseases of the Upper Air Passages in Singers and Public Speakers.
    Dr. Charles G. Stivers (Los Angeles).
14. The Alcoholic Injection of Nerves.
    Dr. H. S. Moore (San Francisco).
15. Some Opinions Concerning Tonsil Surgery.
    Dr. C. C. Stephenson (Los Angeles).
16. Operative and Post Operative Tonsillar Hemorrhage.
    Dr. W. S. Franklin (San Francisco).

SECOND DAY.

Wednesday, April 17, 1912.

Morning Session, 9 o'Clock.

17. Report of Case of Cyst of the Brain.
    Dr. Edward T. Dillon (Los Angeles).

Discussion to be opened by Dr. Wallace I. Terry, San Francisco.

18. Some Experimental Work upon the Hypophysis Cerebri.
    Dr. H. Edward Castle (San Francisco).
19. The Operative Treatment of Fractures.
    Dr. Guy Cochran (Los Angeles).

Discussion to be opened by Dr. W. W. Richardson (Los Angeles).

20. Some Experimental Work (subject title to be given).
    Dr. Dudley Tait (San Francisco).
21. Abscess of the Liver with Report of Twenty-three Cases.
    Dr. Rae Smith (Los Angeles).
22. Some Surgical Considerations of the Caput Coli.
    Dr. Raymond Russ (San Francisco).
23. Sarcoma of the Uterus.
    Dr. Emmet Rixford (San Francisco).

Discussion to be opened by Dr. W. W. Beckett (Los Angeles).

24. Diaphragmatic Pleurisy; a Stumbling-Block in the Consideration of the Acute Abdomen.
    Dr. Daniel Crosby (Fruitvale).

Discussion by Dr. Harry Sherman (San Francisco), Dr. Wallace I. Terry (San Francisco).

25. Congenital Hydronephrosis.
    Dr. H. A. L. Ryfkogel (San Francisco).

Discussion to be opened by Dr. E. C. Moore (Los Angeles).

26. An Analysis of the Examination of Eighteen Hundred Women of the Prostitute Class in the City of San Francisco, with Special Reference to the Prevalence of Veneral Disease.
    Dr. Arthur H. Reinstein (San Francisco).

Eye, Ear, Nose and Throat.

9 o'Clock Wednesday Morning.

(In a separate meeting room.)

27. Demonstration of a Case of Pulsating Exophthalmos.
    Dr. W. F. Blake (San Francisco).
28. The Prevention of Blindness from Purulent Ophthalmia.
    Dr. Jos. M. Shaul (Santa Ana).
29. A Case of Endothelioma of the Orbit and Ethmoids.
    Dr. P. A. Jordan (San Jose).
30. General Anesthetics in Cataract Work.
    Dr. Vard H. Hulen (San Francisco), as guest.
31. Persistent Conjunctival Hyperaemia after Cataract Extraction and Its Cause. Report of Six Cases illustrating this Condition.
    Dr. P. de Obarrio (San Francisco).
32. Pathologic Conditions of the Eye Secondary to Disease of the Lymphatics of the Neck and Throat.
    Dr. E. W. Alexander (San Francisco).
33. On the Tolerance of the Vitreous to Dislocated Lenses as an Index to Reclamation in Given Cases.
    Dr. P. de Obarrio (San Francisco).
34. Barany's Investigation on Localization in the Cerebellum.
    Dr. Kaspar Pischel (San Francisco).

Wednesday Afternoon, April 17, 1912.

[**Note.** There will be no session of the State Society on Wednesday afternoon, but the following program has been arranged for the Medical Milk Commissions, to be held Wednesday afternoon at 2 p. m.]

Fourth annual meeting of the California Association of Medical Milk Commissions, Hotel Del Monte, Wednesday, April 17, 1912, at 2 p. m.

1. **Progress of the Certified Milk Movement in California.** Thomas C. McCleave, M. D., president Alameda County Milk Commission.

2. Some Difficulties in Securing Laws Requiring Tuberculin Testing in Dairy Cattle. L. M. Powers, M. D., Health Commissioner Los Angeles; member Medical Milk Commission Los Angeles County Medical Association.

3. The Production of Certified Milk. H. R. Timm, A. B., Stanford. Proprietor of Timm Certified Dairy, Dixon, Calif.

4. The Necessity of Fresh Clean Milk for Infant Feeding. P. V. K. Johnson, M. D., secretary Medical Milk Commission Los Angeles County Medical Association.

5. The Relation of the Certified Milk Supply to the General Milk Supply. Adelaide Brown, M. D., president Medical Milk Commission San Francisco County Medical Society; secretary California Association of Medical Milk Commissions.

6. The Importance of Certified Milk in the Reduction of Infant Mortality. E. Charles Fleischner, M. D., secretary Medical Milk Commission San Francisco County Medical Society.

The members of the Medical Society of the State of California attending the meeting at Del Monte will be very cordially welcomed to this session.

ADELAIDE BROWN,
Secretary California Association Medical Milk Commissions.

THIRD DAY.

Thursday, April 18, 1912.

Morning Session.

9 A. M.

35. Clinical Value of the Arneth Method of Blood Examination. A Preliminary Report.
Dr. LeRoy H. Briggs (Oakland).

36. Tropical Diseases in California and Measures for Their Control.
Dr. Herbert Gunn (San Francisco).

37. The Mechanism and Clinical Aspect of Chronic Arterial Hypertension.
Dr. Robert L. Cunningham (Los Angeles).
Discussion opened by Dr. W. Ophüls (San Francisco).

38. Typhoid-Vaccination.
Major Robert Brooke, Medical Corps U. S. Army (by invitation).

39 The Relationship of Gastric Motility to Secretion.
Dr. R. S. Lavenson (Los Angeles).
Discussion opened by Dr. L. G. Visscher (Los Angeles).

40. The Role of the X-Ray in the Diagnosis of Diseases of the Stomach (illustrated by lantern slides). Dr. C. M. Cooper and Dr. Geo. L. Painter (San Francisco).
Discussion opened by Dr. Albert Soiland (Los Angeles).

41. Demonstration of Neuro-Pathological Material with Epitome of Clinical Notes.
Dr. Milton B. Lennon (San Francisco).

42. The Importance of Non-Diabetic Diaceturia.
Dr. Chas. E. Fleischner (San Francisco).
Discussion opened by Dr. P. V. K. Johnson (Los Angeles).

43. Dietetics from the Modern Standpoint.
Dr. Annie W. Williams (Hayward).

Urology.

Thursday Morning, 9 o'Clock.

(In a separate meeting room.)

44 Latent Gonorrhoea in the Female.
Dr. Walter S. Johnson (San Francisco).
Discussed by Dr. V. G. Vecki (San Francisco)

45. Exceptional Cases of Urinary Calculi.
Dr. E. G. McConnell (San Francisco).
Discussed by Dr. R. L. Rigdon (San Francisco).

46. Treatment of Renal Tuberculosis.
Dr. A. B. Grosse (San Francisco).
Discussed by Dr. M. Krotoszyner (San Francisco).

47. Clinical Aspects of Uro-Sepsis.
Dr. M. Krotoszyner (San Francisco).
Discussed by Dr. A. J. Lartigau and Dr. M. Silverberg (San Francisco).

48. Pathology and Treatment of Hypernephroma with Report of Three Cases.
Dr. George L. Eaton (San Francisco).
Discussed by Dr. G. MacGowan (Los Angeles).

Eye, Ear, Nose and Throat.

Thursday Morning, 9 o'Clock.

(In a separate meeting room.)

49. Symptomatology Hypophyseal Affections.
Dr. Chas. Minor Cooper (San Francisco).

50. Pathology of Hypophyseal Affections.
Dr. G. Y. Rusk (Berkeley).

51. X-Ray of the Hypophyseal Region.
Dr. W. W. Boardman (San Francisco).

52. Operative Procedures in Hypophyseal Affections.
Dr. H. B. Graham (San Francisco).

53. A Case of Acute Middle Ear Abscess with Sinus and Jugular Involvement of Rapid Development.
Dr. Hill Hastings (Los Angeles).

54. Vertigo.
Dr. Cullen F. Welty (San Francisco).

55. The Nose and Bodily Reflexes.
Dr. Henry Horn (San Francisco).

56. Plastic Surgery of the Nose.
Dr. Leo Eloesser (San Francisco).

57. X-Rays of the Accessory Sinuses.
Dr. G. R. Hubbell and Dr. Henry Horn (San Francisco).

58. The Complement Fixation Test and Salvarsan in Accessory Sinus Affections.
Dr. Victor Lucchetti (San Francisco).

Thursday Afternoon at 2 o'Clock.

General Session.

Symposium on the Wassermann Reaction and Salvarsan Treatment in Syphilis.

59. Experiences with the Wassermann Test.
Dr. Walter V. Brem (Los Angeles).

60. Progress in the Diagnosis and Treatment of Syphilis.
Dr. E. D. Chipman (San Francisco).

61. Abortive Treatment of Syphilis.
Dr. Howard Morrow and Dr. L. L. Schmitt (San Francisco).

62. Salvarsan in Diseases of the Nervous System.
Dr. W. F. Schaller (San Francisco).

63. Salvarsan in Late Obstinate Syphilitic Lesions of the Palms, Soles and Mucous Membranes.
Dr. D. W. Montgomery (San Francisco).

64. Salvarsan in Visceral Syphilis.
Dr. Wm. Fitch Cheney (San Francisco).

65. The Fallability of Salvarsan.
Dr. Leon J. Roth (Los Angeles).

66. Salvarsan vs. Mercury.
Dr. Victor G. Vecki (San Francisco).

67. Use of Salvarsan in Continental Europe.
Dr. Chas. D. Lockwood (Pasadena).
Discussion by Dr. L. Gross (San Francisco), Dr. G. MacGowan (Los Angeles), Dr. Leo Newmark (San Francisco), Dr. H. R. Oliver (San Francisco), and others.

ORIGINAL ARTICLES

THE LIFE OF RADIUM AND ITS THERAPEUTIC USE IN INTERNAL MEDICINE.*

By E. O. JELLINEK, M. D., San Francisco.

You remember, that if you force a sufficient electric current through the so-called Crookes tube, that this tube will display some characteristic light effects around the anode and the kathode. As the light effects displayed around the kathode are the only ones which have any bearing on the subject which we intend to investigate to-night, I will ask your permission to recall in a few words the phenomena displaying themselves around this terminal.

The dim purple light emitted from the kathode is commonly known as the kathode ray. If you perforate the kathode with little holes, there will be another display of rays behind the kathode. These were discovered by Goldstein and are named canal or Goldstein rays. Wherever the kathode rays hit a hard body,—which in the original Crookes tube was the glass wall,—a new kind of ray is produced. These new rays with their strangely penetrative power were discovered by Professor Roentgen in 1895, and have been known since as Roentgen or X-Rays. Let me add to these well-known facts, that the canal or Goldstein rays are practically most minute corpuscles thrown from the anode and charged with positive electricity; that the kathode rays are a moving stream of negatively charged electrons, and that the invisible Roentgen rays as you have seen are secondarily produced by these visible kathode rays, and that the fluorescence of the X-Ray tube is due to the impact of the cathode stream on the glass wall.

The fact that the Roentgen rays were found to be associated with the fluorescence of the glass wall, induced the physicists to investigate, if with other fluorescent bodies, which show light displays after having been exposed to bright sunlight rays were produced which had a similar effect on the photographic plate.

By great good fortune—and you all know what an important part great good fortune has played in quite a number of the most notable discoveries—Henry Becquerel chose as his trial phosphorescent body a preparation of uranium, which previously was exposed to sunlight and then placed upon a photographic plate wrapped in black paper. The result was that the photographic plate beneath the uranium preparation was darkened.

Picture No. 1.

Picture No. 2.

Entirely unlike the sunlight, this uranium preparation had sent out rays which penetrated the black envelope containing the photographic plate, and further experiments showed that these uranium rays would also penetrate thin plates of metal. And at this point great good fortune played again the leading part in Mr. Becquerel's experiment. For one day, the sun being obscure, the uranium preparation could not be exposed to sunlight, and since no after-shining could be expected, the plates with the uranium preparation were set aside in a drawer. Luckily this plate was developed several weeks later, and Mr. Becquerel found that the effect on the photographic plate was exactly the same as it was after the uranium preparation had been rendered phosphorescent by previous exposure to the sunlight. From these experiments he concluded, that the emission of the effective rays from the uranium preparation had nothing to do with a previous exposure to sunlight and a subsequent after-shining, but that these effective rays were a specific property of the uranium preparation itself; further investigations showed that the power of emitting these rays was possessed by all uranium preparations quite independent of any influence from the outside. These rays with all their specific properties, emitted from the uranium, and as later found, also from the thorium preparations—have been called in honor of their discoverer—Becquerel Rays.

Picture No. 1—A photograph obtained by placing a piece of pitchblend on a coin and a clamp, the plate and pitchblend being bound together by two strips of adhesive plaster (see text).

It being a well-known fact that the ultra violet rays, the kathode and Roentgen rays, would ionize the air, which means that they would make air known to be a bad conductor of electricity into a good one, the Becquerel rays were examined as to their ionizing properties, and it was found that the approach of a piece of uranium or any one of its salts would cause the leaves of a gold leaf electroscope, that had been previously charged with positive or negative electricity, to collapse, and from the velocity with which the collapse of the leaves takes place, we are able to calculate the ionizing power of the preparation in question.

M. and Mme. Curie, working at the time of Becquerel's discovery in his laboratory, undertook to investigate uranium, its different salts and the minerals containing it. Their investigations led to the most interesting and surprising discovery, that many of the uranium-containing minerals showed by far more ionizing power than the

* Read before the County Medical Society on September 5th and October 12th, 1911.

metal uranium itself, and the so-called pitchblend mined in Joachimsthal, in Bohemia, was found to be actually three times as ionizing as the metal uranium. The conclusion of these investigators was, that there must be some other ionizing element than uranium in the pitchblend and by chemically dividing and examining each of the so gained products as to their ionizing power, and then by further and further and still further division of these respective products they finally succeeded in separating two most effective ionizing substances, the one always accompanied by bismuth, which Mme. Curie called *Polonium,* in honor of her fatherland, Poland; the other one always accompanied by barium, which was named by her *Radium;* and it was only after treating many tons of pitchblend that Mme. Curie succeeded in producing a few decigrams of a pure Radium-chloride. The ionizing power of this radium-chloride is about a million times greater than that of uranium.

Now before proceeding any further with the properties of this new element, we will look for a moment at the meaning of the term radioactivity! Let us stop for a moment and reflect upon our stored knowledge of all our well-known elements, for instance gold, silver, lead, copper, iron, etc., elements known for hundreds of years; they have never changed, they are always the same, consisting, as we have a right to believe, of dead atoms, they do not emit any rays similar to those we

Picture No. 2—A photograph obtained by placing the mantel of a Welsbach light upon a metal ring and clamp. The Thorium in the mantel photographs the metallic objects and at the same time photographs itself as evidenced by the network effect. The shadow above the ring is due to a crack in the mantel.

have learned of, they cannot ionize the air, at least not to such an extent as to show any influence on such an extremely delicate instrument as the electroscope. And I would mention here that 1 50,000,000 of a milligram of radium, will still discharge a loaded electroscope. Maybe all these elements are not dead, maybe their atoms do undergo certain changes, but if so, these changes occur so slowly that they are inconceivable to any human conception. Now compare with these well known facts the knowledge we have gained from a study of uranium preparations and of radium! We have learned of a spontaneous and continuous emission of rays, which affect the photographic plate! That means emission of energy, and we are able to measure this energy by the fact that these so-called rays apart from their effect on the photographic plate are capable of ionizing the air. But no emission of energy could possibly occur without creation of heat! But if an atom is sending out so-called rays, which will have an effect on the photographic plate, and ionizes the air, and produces heat, and all this spontaneously and continuously, this atom must be alive, and must be continually changing! And through this process the atom of uranium changes to the atom of uranium-X, and this uranium-X into another atom, ionium, which Soddy calls the parent of radium, and this ionium by emitting energy, begets the new atom called radium, this still possessing the mentioned properties of emitting rays, of ionizing and of producing heat. It was the belief of the alchemists that it was possible to transmutate one element into another, and it was the height of their ambition to transmutate, for instance, the atom of lead into an atom of gold! And adhering to our iron barred rules as physicist and chemist we laughed at their dreaming of such a possible transmutation of atoms! But here is an atom of uranium, emitting energy and by doing so changing to the atom uranium-X, uranium-X to ionium, and the ionium by emitting energy, changing to the atom radium. In other words, we see that the transmutation of atoms into other atoms is an established fact, and this spontaneous transmutation is the foundation of a new science, the science of radioactivity, and radioactivity may be defined as the property of elements by which groups of their atoms will spontaneously change into groups of other atoms.

Having rehearsed the most important fundamental principles of radioactivity, and having shown you how radium is begotten, I shall now try to show you the different transmutations of the radium atom itself with the necessary allusion to Rutherford's theory, as to how this transmutation takes place, and I shall try to describe to you the different properties of the different transmutation bodies of the atom radium.

The so-called Becquerel rays are known to consist of three kinds of different rays, called alpha, beta and gamma rays. In a short paper which I recently wrote during my stay in Germany, which paper I turned over for publication to my friend Dr. S. Lowenthal in Brunswick, after it had gained the approval of quite a number of radium authorities, I protested against this nomenclature, basing my objections upon the following consideration. In advancing new names we should choose them in such a way that the name suggests the most striking properties of the object considered, or if we cannot do this, we at least should avoid names which obscure by reminding us of properties of other already known objects, which are not the characteristic or essential properties of our new object. In this instance, speaking of rays we at once are reminded of the rays of the sun-

light, penetrating longitudinally with transverse swingings, and possessing the cardinal properties of reflection, refraction and polarization. But the so-called alpha, beta and gamma rays have nothing in common with the properties just mentioned. The so-called alpha rays are most infinitesimal corpuscles loaded with positive electricity, of most effective ionizing power, moving with a velocity of 10,000 miles a second. They are absorbed within a flight of three inches and they cannot penetrate a sheet of paper. Being charged with positive electricity they will be attracted by the negative (south) pole of the magnet. They have no transverse swingings, and they cannot be reflected, refracted or polarized. I suggested that this ray be called alpha particle, and for its writing sign I suggested an alpha with a plus sign after and above it. The advantage of writing it in such a manner becomes evident at a glance, if I mention to you that this alpha plus particle may lose its positive charge of electricity and therefore become a simple alpha, then it is already a transmutation body of the former alpha plus, it is no more subject to further transmutation, because it is deprived of its life, it is a dead body and absolutely identical with the atom which we find in the spectrum of the sun, and which is known as helium, and if you require a writing sign for helium it should be a simple alpha. The atomic weight of helium is 4. The alpha particles are identical with the canal or Goldstein rays of the Crookes tube.

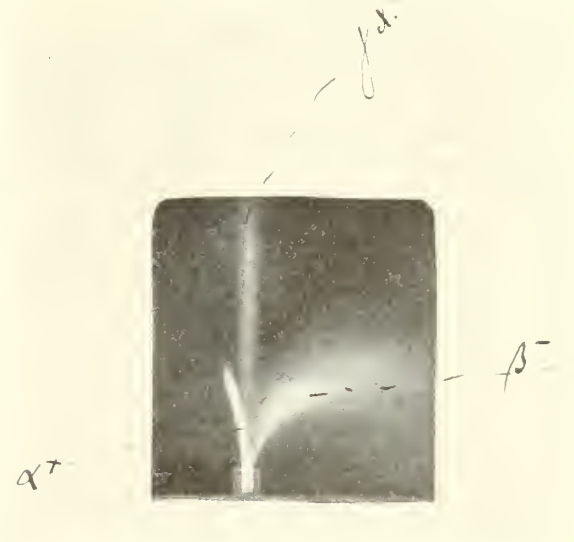
Neither have the so-called beta rays anything in common with the properties of the sunlight rays. They cannot be reflected, refracted or polarized. They are a stream of negatively charged electrons having no mass or weight. They are attracted by the positive (north) pole of the magnet, and their velocity is about 300,000 Klm. or 36,000 miles to the second. Their power of penetration is about 100 times greater than that of the alpha particles, and they will penetrate aluminum 0.5 cm. These so-called beta rays are in all their specific properties identical with the kathode rays of the Crookes tube, although the velocity of the latter is only 1000-2000 miles a second. I therefore suggest that these so-called beta rays be named beta kathode electrons, to indicate their kathode ray nature, for short: The beta electrons, and their sign in writing should be a beta with a minus sign after and above. The so-called gamma rays which always accompany the beta electrons are identical with the Roentgen X-rays, but their power of penetration is very much greater than that of the X-rays. The gamma rays will penetrate a plate of iron of one foot thickness. They cannot be reflected, refracted, polarized or influenced by a magnet.

Picture No. 3.

As the name of the X-ray is universally accepted, I would suggest naming these so-called gamma rays gamma X-rays.

Following this suggestion I shall use in this paper the terms: Alpha particles, beta electrons and gamma X-rays.

Returning to the life history of radium let us look at Rutherford's views regarding the transmutation of the radium atom, and in doing so it is best to begin with its oldest known ancestor, namely, uranium. Uranium possesses the greatest atomic weight of all elements, its atomic weight being 238 and its average life 7,500,000,000 years. In the course of disintegration the uranium atom will expel one atom of helium, that we called alpha and which we learned has an atomic weight of 4, and the result of the expulsion of this helium atom is the transmutation of the uranium atom with its atomic weight of 238, into a new body which is called uranium-X, atomic weight 234 average life 32 days. It is claimed that uranium-X does not emit alpha particles, but only beta electrons, but if no helium atom is expelled from uranium-X, the next transmutation body should have the same atomic weight as uranium-X, namely 234. Now there must be one or more intermediate bodies, so far unknown to us, for the next body of the transmutation series known to us has the atomic weight of 230; an unknown intermediate body having expelled an atom of the atomic weight of helium. The transmutation body with atomic weight of 230 has been named ionium by Boltwood. Its average duration of life is so far unknown to us. Since it is accepted that the expulsion of one helium atom will transmutate this body into radium-atomic weight 226—Soddy called ionium the parent of radium. The so-gained transmutation body of radium has an average life of 2500 years and emits alpha particles only. Before proceeding to the offspring of radium itself, I will draw for you the genealogical tree of Rutherford and Soddy, showing the descent of radium, only adding to their original scheme the velocity of the alpha particles of the different transmutation bodies. The scheme is this: Diagram No. 1.



Picture No. 3—Shows the influence of a magneto upon the so-called rays emitted by Radium.

I have added to the Rutherford-Soddy scheme the expulsion of a helium atom from one of the intermediate bodies to explain graphically the atomic weight of 230, possessed by ionium. The

radium atom produces only alpha plus particles, which move with a velocity of 9600 miles per second and by expelling a helium atom (alpha) transmutates into a new body called emanation. As one helium atom was expelled from the radium atom the atomic weight of the emanation must be 226 (radium) minus 4 (helium) equals 222 (emanation). The average life of emanation is 5.3 days and it produces alpha particles only, these having a velocity of 10,400 miles per second. The emanation is a gas belonging to the same group as argon and helium, gases neither capable of absorption by any known reagent, nor possessed of any power of chemical combination, and they are called precious gases (Edelgase). By expelling a helium atom the emanation will form the transmutation body, radium A., which must have an atomic weight of 218, and which has an average life of 4.3 minutes. It produces alpha particles only with a velocity of 11,000 miles per second. By expelling a helium atom this body, radium A., begets the body radium B., with the atomic weight of 214 and a life of 28 minutes. The body radium B. produces weak beta electrons (beta minus) only, and as no helium atom is expelled the atomic weight of the following body in the series of transmutation, namely the body radium C., has the same atomic weight as the body B. namely: 214. Its life is figured out as being 30.5 minutes. *The radium bodies A. B. C. are called the active deposits of rapid change.* The radium body C. produces alpha particles of a velocity of 12,800 miles per second, the greatest velocity of the alpha plus particles we have so far encountered. The body radium C. also sends out strong beta electrons which are always accompanied by gamma X-rays.

In completing the genealogical tree previously drawn we obtain diagram No. 2.

By expelling a helium atom the radium body C. disintegrates into four successive radium bodies: *radium D., radium E.1., radium E.2., and radium F., which four bodies are called the active deposits of slow change.* As radium body C. has transmutated into radium body D. by expelling a helium atom the atomic weight of body D. is 210 and its average life about 17 years. This radium body D., as we shall see later, is particularly interesting in virtue of its therapeutic properties, it having been found capable by Gudzent of transforming the monosodium-urate of the gouty blood into a far more soluble body and then of converting this more soluble body through intermediate bodies into carbon-dioxide and ammonium.

As no helium atom is expelled from body D. and the two following transmutations radium E.1. and E.2., the atomic weights of E. 1. with an average life of 9.5 days, of radium body E. 2. with an average life of 7 days and of radium body F. must be 210. Radium F. is extremely interesting. It is identical with the radio-active body which Mme. Curie separated from the pitchblend before she discovered the radium, and which she called polonium. Its atomic weight as mentioned previously is 210, its average life 203 days, and it emits only alpha particles of a comparatively slow velocity of 10,000 miles per second. As alpha particles are emitted from radium F. the expulsion of a helium atom will bring the atomic weight of the following and last known radium body of the series of disintegration, the radium body G. down to 206, which is also the atomic weight of the element *lead! And as lead is always found to accompany uranium in whatever minerals the latter is discovered, the possibility presents itself, that lead may be the end link, the corpse of the uranium atom.*

We are in a position now to complete the graphic illustrations of the Rutherford-Soddy scheme. Diagram No. 3.

If radium bromide be dissolved in water, three-fourths of the radioactive power of the radium bromide is lost, because the escaping radium body called emanation, which is a gas, carries away three-fourths of the radioactive power, and if you examine this radium solution now as to its contents, you will find alpha particles only, no beta electrons and consequently no gamma X-rays. Now keep this radium bromide solution in a closed bottle in the dark or in the light, in the cold or in the heat, this radium bromide will produce its transmutation bodies, its radioactive power will increase every day and after thirty days this solution will have exactly the same radioactive power as had the radium bromide crystals before you dissolved them. Open your bottle and drive out the emanation by boiling your solution or evaporate all the water by boiling, so that you get back your crystals of radium bromide, and you will find that your radium through this procedure has again lost three-fourths of its radioactive power, and again only emits alpha particles, but after thirty days you will find that your radium bromide has recuperated to its full radioactive power, as if you never had changed its state of aggregation. Add chemicals and acids to it, do with it whatever you please, you never can alter its life, it will in spite of all manipulations constantly produce the same amount of energy through transmutation, losing weight it is true, but to a degree inconceivable to our conception.

You will wonder, how does the radium that has lost three-fourths of its radioactive power by our manipulations, regain its full power in 30 days? If you look through the magnifying glass of this little instrument, which is called the Spinthariscope, you will see a most wonderful display of scintillating bodies flying around like shooting stars. The display you see here is nothing else but alpha particles bombarding a little screen covered with zinc-sulphite. These alpha particles are shot out from the point of a needle that has been dipped in a radium solution and has been fixed about one-fourth to one-half cm. distance in front of the zinc-sulphite screen. Every time an alpha particle hits a zinc-sulphite crystal, the latter explodes and these explosions are the light effects which you see. You will readily understand that this display will come to a standstill as soon as all these zinc-sulphite crystals have been used up by the explosions, but if you replace the worn out screen by a new one the display will

go on till the new screen is worn out and so on for 2500 years. You can appreciate how small a quantity of radium is used in this little instrument, when I tell you that a sixtieth of a grain—one milligram—of radium, has been dissolved in probably a pint of water and the point of this needle has been only dipped into this extremely weak solution. And what you see here is practically the key to the understanding of radioactivity. What is happening here, the bombardment of the screen with alpha particles sent out by the radium, takes place in every atom of the radium, on the surface just as well as in the inner parts, no matter whether the radium is in solution or in solid form. Now we have heard that the penetration power of the alpha particles is a very limited one, it will not penetrate through a sheet of paper, or through three inches of air. It is plain therefore, that only alpha particles emitted from radium atoms of the surface can find a free outlet, and that any alpha particles emitted from the atoms of the interior of the solution or solid body will be held back and being radioactive and held back are a source of energy which increase the radioactive power of the specimen. If I now dissolve a quantity of radium bromide in water I set free these imprisoned alpha particles, hence the sudden drop in the radioactive power of the solution, and on the other hand by closing the bottle again and thus retaining in the interior of the solution the alpha particles the gradual restoration of the full radioactive power occurs in 30 days. This property possessed by radium of regaining its full radioactive power is a property of all radioactive elements and is the fundamental law of the conservation of radioactivity. Besides the principal properties of the alpha particles mentioned before, I have to make you familiar with another most important property of the radioactive elements, which again is most closely connected with the alpha particles. *Figure No. 1.*

You will have noticed on the photographic plate where the piece of pitchblend photographed itself beside the wire clamps which were placed between the pitchblend and the photographic plate, two broad bands on the plate, which are photographs of two strips of zinc-oxide plaster, with which I bound the pitchblend to the plate, to steady my object. In spite of being pasted above the pitchblend, and in spite of being a substance, which rays would penetrate so easily as to give you a good picture on the plate, even if they had been placed between the pitchbled and the plate, you see here quite distinctly a photographic reproduction of the two strips. Now what happened in this instance is this: The alpha particles emitted from the radioactive pitchblend hitting this zinc-oxide plaster covered it with a deposit of probably millions of alpha particles with all their radioactive properties, and these have produced under conditions previously mentioned exactly the same beta electrons and gamma X-rays, as any radioactive element would under the same conditions. The alpha particles as you know could not have penetrated the two layers of paper the plate was wrapped in, so it could never have effected the plate, therefore it must have been the effect of the beta electrons or gamma X-rays. These deposits will occur on any bodies within reach of alpha particles, and as the emanation gas, which as you know has an average life of 5.3 days and has a wider field for its flight than alpha particles, which are absorbed within three inches, and as the emanation as you know, emits again alpha particles, you can understand that I can effect deposits of alpha particles on all the walls, floor, ceiling and furniture of a big room, if I only have a sufficient amount of radium and the necessary time at my command; and this deposit will be radioactive. We therefore speak of radioactive deposits. If I now remove the spreading source, the radioactivity of this room will grow weaker and weaker by the dying off of the different radioactive transmutation bodies. Whilst the radioactivity of radium is a constant one, the radioactivity of this room must be a limited one, since it is induced by radioactive deposits of limited life.

If I chose for an experiment a quart of water and lead into the water radium emanation, I can make the water radioactive, strong or weak, just according to the quantity of emanation I let in, it now possessing all the properties of radioactivity, but for a limited time only since emanation loses its life in 5.3 days, but if I dissolve a particle of radium with a life of 2500 years in the quart of water the solution will remain radioactive for that number of years.

Having knowledge of the varied properties of radium and its different transmutation bodies, experimenters studied their stimulating and destructive effects on the lower and higher animals. They then applied them to human beings, traced their effects step by step through thousands and thousands of experiments, and I will give a brief synopsis only, of the conclusions arrived at through the experiments and investigations of the different scientists during the last ten years.

In discussing radium as a therapeutic agent, we will have to consider its properties in regard to its general influence upon the body, and in regard to its local effect. While the latter is due to the influence of its emitted so-called rays, that is, the alpha particles, beta electrons and gamma X-rays, the general influence on the body is due to the biological action of the radium emanation and its disintegration bodies, and this we will further consider. People have accepted for years that certain ailments of the human body are cured or at least beneficially influenced by certain natural springs, by drinking the water or by bathing in the springs. The water has been examined again and again and different ingredients made responsible for the curative results, but as the different springs showed different ingredients, though having the same curative reputation, no conception of a specific curative agent was possible. Furthermore, it was found that these waters bottled at the springs and shipped to the patients' homes, never had the effective value that they had at the springs, although the chemical ingredients had not changed and the waters were heated to their natural temperature. And so the layman, wandering every year to the

springs and finding there relief from his ailment, whilst he found no relief by drinking the same waters at home, formed his own theory, ascribing to supernatural and mystic powers the virtues which otherwise he could not explain. He imagined that there was a mystic power which came out of the springs and cured him; he called this mystic power the "spirit of the springs." He thought that his relief was due to his inhaling the spirit of the springs as it rose out of the water. This belief was the tradition of generations in ancient years and their good common sense told them to hold back the spirit of the springs by building little wooden houses over the spring. They sat in these little wooden houses to inhale the spirit and they got well! These little wooden houses have been torn down by scientists, who could not allow mystic superstition to interfere with their highly scientific way of using the waters for treatment! But during the last six months two beautiful pavilions have been erected and opened for the public, one over the spring at Teplitz, at the cost of 60,000 crowns, the other over the spring in Wiesbaden, at the cost of 60,000 marks, with the purpose of leading the spirit of the springs into the pavilions, and hundreds of sick people sit there for hours every day inhaling the very same spirit of the springs as people did hundreds of years before them, but the name of the spirit has been changed! For what these people inhale in these pavilions is called to-day radium emanation. It may be stated here that emanation is considered, if not the only, at least the most effective curative medium of the springs, and that the effective value of the water depends upon its degree of radioactivity. As it would have been a hard test to have proven the curative value of the emanation by separating it from the other spring ingredients, experiments were made by different scientists to produce artificial radioactive waters and to compare the curative results gained from these artificial waters with those of the natural thermal springs, and they found results equal and even better than those brought about by the springs.

The credit of investigating the effect of emanation treatment is undoubtedly due to S. Lowenthal, who in 1906 in a series of scientific and systematic investigations showed the influence of emanation upon the healthy and sick. He was able to show that the introduction of ten and fifteen thousand volt units of emanation into the body of a healthy person, had no effect whatever, neither subjectively nor objectively. Quite different, however, was the reaction in twelve cases of chronic rheumatism, eleven of which after drinking eleven to fifteen thousand volt units of radium water for one or two days experienced a swelling and increased pain, not only in the joints affected at the time, but also in the joints involved in former attacks, a reaction similar to the so-called "reaction" which the rheumatics experienced at the springs, a reaction which was always considered by the layman, as well as the physician a very favorable sign of a probable cure. Other investigations of Lowenthal in numerous cases have shown decided cures and improvements with or without reaction.

On the ground of these experiences of Lowenthal the emanation treatment has been taken up universally in Germany and Austria, by the clinics and specialists for different diseases, and the following conclusion has been arrived at and enunciated by Paul Wichman. Cures or marked improvements by administering radium emanation, by inhaling, drinking, bathing, and by the use of radium compresses have been seen in the following affections: Chronic rheumatism of joints and muscles, chronic neuritis, neuralgia, shooting pains of tabes, chronic catarrh of the different parts of the body, sluggish chronic effusions, gout, certain female troubles as endo- para- and perimetritis of the actue or subacute forms. Accepting his statement, two most important questions require consideration: First, what are the possible properties of the emanation which bring about the cures of these morbid conditions? Second, as results have been obtained by compresses, drinking of radium water, bathing in the water, by the inhalation of emanation, which of these modifications is therapeutically the most effective?

Regarding the curative properties of the emanation many speculations presented themselves as to the possibility of bactericidal action, of a transformation of lecithin, of a direct alteration of toxins, of a production of H_2O_2 out of the waters of the tissues; but all these theories have been rendered improbable as far as the emanation is concerned. A very important step in the series of investigations was taken by Bergell and Bickel. These authors studied the influence of the emanation upon the ferments and found that the inhibiting influence of salt solution upon pepsin and pancreatin action was negatived by the adding of emanation, in other words, that the emanation had actually actuated the ferments. Since by systematic investigations Löwenthal in co-operation with Wohlgemuth and Edelstein proved also the actuation of the autolytic and diastatic ferments, it has been accepted, that the biological action of the emanation and its disintegration bodies consist in an actuation of metabolic as well as of autolytic ferments. The great importance of autolytic stimulations is apparent in all conditions where morbid deposits have to be carried away.

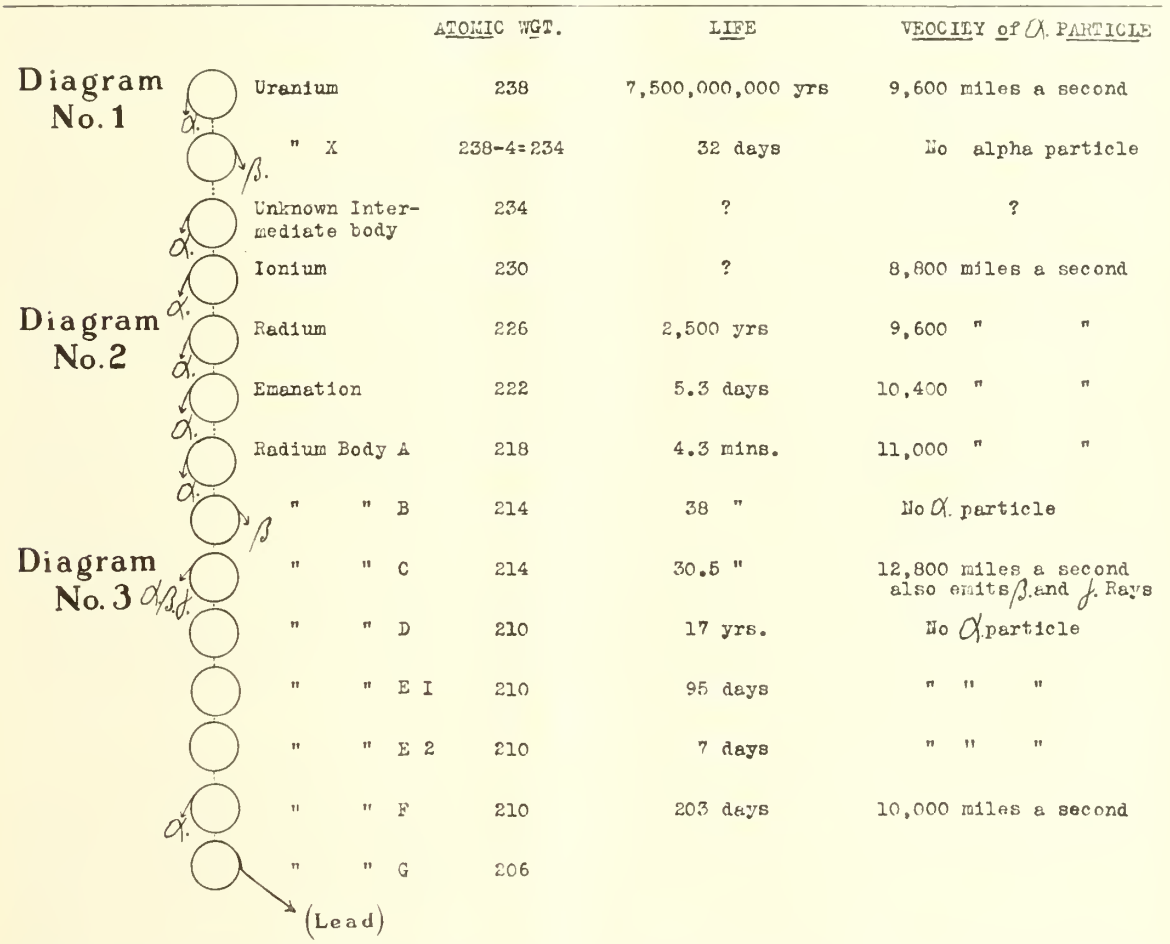
The importance of the stimulation of metabolic ferments becomes great in those instances in which insufficiency of these ferments result in disturbances of metabolism. As gout is the best studied disease of metabolism, and investigators have added much to the understanding of the true nature of the disease, it will be readily understood that gout was chosen as the metabolic disease on which to try the therapeutic effects of emanation, with, I am glad to say, the happiest results. According to the investigations of Brugsh and Schittenhelm we accept as proven to-day, that gout is a disease of metabolism, brought about by a disturbance of the entire system of the ferments of the purinmetabolism, and this in such a way, that formation of the uric acid is delayed, as well as its further splitting up and its elimination. This leads to a

continuous accumulation of uric acid in the blood, a condition called urikamia.

Through the work of Gudzent we know to-day that uric acid can circulate in the blood as a salt only, indeed as monosodium-urate, and that this monosodium-urate exists in two isomeric forms; the lactam-urate, which is formed first, is more soluble but unstable and changes into the isomer; the lactim-urate, which is stable, but less soluble. The solubility of the lactam-urate is 18.4 mlgr. in 100 cm. serum according to Gudzent, while the solubility of the lactim-urate is 8.3 mlgr. only. It was found that as the monosodium-urate in gout circulated in the blood as the stable but very much less soluble lactim-urate, at times the blood becomes supersaturated with the uric acid. By means of systematic experiments in a test tube, Gudzent found that one of the disintegration bodies of the radium emanation, the radium body D. will either retard the formation of the more insoluble isomer or transform the lactim-urate into a by far more easily soluble body, which later will finally be burned to carbondioxide and ammonium.

The test tube experiment was then transferred to actual test on gouty men, and emanation treatment by way of inhalation in the emanatorium was used on twenty-five gouty patients, their blood examined before the treatment showing the presence of M. S. U. The blood again was examined for M. S. U. after emanation treatment from three to six weeks and in twenty-two out of these twenty-five cases the monosodium-urate had disappeared from the blood, in two cases tophi had disappeared altogether, and in other cases had grown decidedly smaller. Equally good results in gout with r. emanation by inhalation, drinking or bathing were reported at the last Balneological Congress in Berlin March 3rd to March 6th, 1911, by Furstenburg, Eichholz, Löwenthal, Kionke and Lackman. I have had a splendid opportunity to observe the results of the emanation treatment in gout and rheumatic affections at His's clinic in Berlin and Löwenthal's emanatorium in Brunswick. In three gouty cases in His's clinic I saw the onset of an acute paroxysm of gout during the session in the emanatorium. The paroxysms were promptly broken by atophan (phenylchinolin-carbonacid), which is given in a dosage of 0.5 to 1 gram four times a day with large quantities of water and bicarbonate of sodium, the latter being added to prevent renal colics by the rapidly excreted uric acid. As this reaction is not infrequent it would be wise to inform patients of a possible occurrence in the beginning of the treatment.

In a paper on gout read before the Anglo-American Medical Society in Berlin in June, 1911, P. F. Richter, one of the leading authorities on diseases of metabolism is Europe, after dwelling upon the treatment of gout, closed his address with the following sentence: "While in former



years we were not able to give our gouty patients any hopes as to a positive cure, we can safely today, after the introduction of the radium emanation treatment, assure our patients that gout ranks in the class of curable diseases." Very encouraging results have also been obtained by different clinicians in the treatment of the various acute and chronic rheumatic troubles of the joints, muscles and nerves. Very satisfactory results with few failures only, are reported in sciatica by Davidsohn, Fürstenberg, Gottlieb, Frankel, Kohlrausch and Mayer, Strasser and Selka and many others. Strasser and Selka, Gottlieb and Stern also report a favorable influence on the shooting pains of tabes. While Laquer and von Noorden do not obtain results in acute gonorrheal arthritis, quite favorable reports have been published by Nagelschmidt in this condition. Mostly cures or very marked improvements with only very few failures are reported in chronic arthritis by Löwenthal, Laquer, Riedel, Furstenberg, Somer, Strasser, Sekla and many others. Quite as numerous are favorable reports by the authors mentioned above in subacute arthritis, in neuralgia and in acute and chronic neuritis. Löwenthal and Kemln reported favorably upon emanation treatment in myocarditis.

The good results obtained in chronic joint diseases naturally do not mean the restoration of destroyed joints, but even in such cases much relief of pain ensues. In a recent paper published by von Noorden and Falta good results are claimed in the treatment of acute and chronic rheumatism, in one case of Bechterew's disease, in rheumatic polyneuritis and in the treatment of the shooting pains and gastric crises of tabes, in sciatica, in angina pectoris, in insomnia and in obstipation.

Following the suggestions of Soddy to use the emanation by way of inhalation in lung affections, Bulling made use of this way of treatment in 112 cases of various affections of the respiratory tract with good results in 67 cases. The clinic of von Noorden and Neusser report the good effects of applications of radioactive compresses over the abdomen in tubercular peritonitis. I am able to report a case of tubercular peritonitis which was seen on the 2nd of May, 1911. The patient was emaciated to a skeleton, peritoneal effusion and extremely painful meteorism were present, and he was not able to keep any food on his stomach, diuresis 500-600 ccm. evening temperature 39.5° C. In the evening of the same day a radium injection was given under the skin of the abdomen. Diuresis on May 3rd was 1000 ccm.; patient could retain some food; evening temperature 37.2; patient more comfortable. On May 4th diuresis 1800 ccm.; patient ate better and could retain all of his food. Evening temperature 37.3°. Radium drinking water was added to the injection. After giving the boy the second injection on the evening of May 4th, I left him in the hands of his attending physician, receiving weekly reports of his progress. The last report, received on July 23rd, showed a gain in weight of 15 klgr., about 32 lbs., the boy was well and walking every forenoon and afternoon for one hour.

As to the question of the best way of administering the radium emanation, either by drinking or bathing, or by inhaling the emanation gas in closed quarters—opinions are widely divided. The most important factor, is according to Löwenthal and Gudzent, to keep the emanation circulating in the blood as long as possible. Blood examination by Gudzent on patients in the emanatorium have shown that after inhaling the emanation gas for one-quarter of an hour only, the amount of emanation to the litre of blood was equal to the proportion of emanation in a litre of air in the emanatorium, and that after three hours of inhaling in the emanatorium the blood contained seven times this amount. The emanation circulating in the blood leaves the body in the expired air, and Löwenthal and Gudzent claim that the emanation introduced into the body by drinking and bathing will leave the body in too short a time to be of service. Eichholz, however, in opposing this suggestion showed by experiments that, if the emanation is taken in drinking water, but in a concentrated form, that is, in not more than 200 ccm. water on a *full* stomach, it will be slowly absorbed and circulate in the blood with sufficient duration to give as good results as are obtained by the inhalation method of treatment. Very good results, particularly in diseases of the pelvic organs, were obtained by Eichholz by giving his strong radioactive water in the form of small enema. Hypodermic injections of radium bromide dissolved in water will naturally throw emanation into the circulation until the solution is absorbed and used up; and inasmuch as the radium containing injections will emit alpha particles, beta electrons and gamma x-rays these injections will be particularly serviceable in the neighborhood of inflamed joints. The analgesic properties of the radium, due to its so-called rays, justify the application of radium compresses which contain a minimal amount of radioactive substance of long life, and they will replace the mud of the mud springs, whose therapeutic value is due to the amount of radioactive substance they contain.

San Francisco, Cal., Jan. 3, 1912.

In a still more recent communication (B. K. W. No. 47, Nov. 20), than those referred to, Gudzent published the results obtained in His's clinic by the use of radium emanation. He considers the inhalation of radium emanation in a close space to be far the best method of administration. He thus treated 50 gouty patients whose blood showed previous to treatment from 6-13.7 mg. monosodium-urate to 100 ccm. of blood. After 24 sittings in the emanatorium the blood of thirty-two of the fifty patients was free of uric acid, and after thirty-six seances the blood of five more became uric acid free.

Further Gudzent whilst drawing attention to the poor results obtained by the commonly used methods in the treatment of arthritis in children claims marked good results from the radium inhalation in the emanatorium; on the other hand joint diseases occurring in aged people showed no improvement. Gudzent finds contrary to von Noorden and Falta, that patients with acute rheumatic fever are not favorably influenced by this form of treatment, but

chronic affections of the joints, muscles and fibrous tissues are greatly benefited except those of tubercular and luetic origin.

Repeatedly has he obtained good results in the treatment of acute chronic gonorrheal arthritis by a combination of inhalation treatment with the injection of radium solution around the affected joints.

THE ECONOMIC VALUE OF THE DECIDUOUS TEETH.*

By M. EVANGELINE JORDON, D. D. S., Los Angeles.

The environment of the American people has entirely changed within the life time of one generation and the connection between the environment and the teeth has not yet forced itself upon the minds of the public. A perfect dental equipment is one of the best gifts to mankind and environment is one of the great destroyers or preservers of the dental equipment. This was recognized when a parallel was drawn between the perfect denture of Sitting Bull who had lived the free life of the plains and had eaten the simple primitive food, and the broken carious teeth of his grandson who had suffered from the conditions of civilization.

Our change of environment has been slow but that it is just as fatal is shown by school examinations in different cities where the number of children needing dental care runs from 75% to as high as 97%.

The value of the teeth with regard to the state, that is, the effect upon the health of society at large and upon the taxes they must pay, is but little realized by the profession and is not even imagined by the laity. In his last report Dr. Ebersole, the chairman of the National Committee on Oral Hygiene, tells us that when the mouths of the school children are put into a healthy condition they can do 20% more work. The lack of such work, he estimates, is an annual loss to the taxpayers of the city of Cleveland of half a million dollars. Cleveland is one city in the United States, and conditions are similar in all communities.

This is only one way in which neglected teeth may increase taxes. The cost of caring for the young criminals might be greatly lessened by keeping the mouths of the poor children in a healthy condition. We should then have fewer young criminals because workers in juvenile courts find carious teeth one of the predisposing causes of viciousness and delinquency. Often these children become honest and upright when their mouths are made healthy. A step farther and the cost of maintaining prisons, courts, and penitentiaries would be lessened if there were fewer criminals growing up to fill them.

Hospitals are a great expense. Those who work in clinics for tuberculous children tell us that such children always have carious teeth. Go into any hospital and examine the mouths of the inmates and you will be satisfied that if their teeth had been kept in repair many of them would not need to be there.

Another heavy item of expense to the taxpayer is in maintaining asylums for the insane which each year are being more crowded. Some of the unhappy people would be well and self supporting if their teeth had been cared for, but now they are a tax upon the people.

And last but saddest of all, when old age is reached many people must be cared for by the state because they were unsuccessful in life. One fifth, or more, of their strength was lost by neglected teeth.

This is needless waste and is largely due to the fact that people think because the deciduous or baby teeth are to be shed that they need no care. Nothing was ever farther from the truth. These teeth are needed for use between the ages of two and twelve and under our present state of civilization every dollar spent in keeping the mouth in perfect health during this period brings better returns in health and strength than three dollars later on.

It was recognized very early in the study of the causes for carious teeth that the child who was raised at the mother's breast had better teeth, better shaped jaws, and was probably freer from adenoids and enlarged tonsils, than the bottle fed baby. It remained for dentists practicing exclusively for children to discover the very serious results that may be traced to bottle feeding. The first of these is the early decay of the teeth and the second is the deforming of the jaws. Many children begin to suffer with carious teeth before the second year. This may usually be traced to the lactic acid action upon the upper incisors of the children who had been fed upon bottle food that is too sweet, such as condensed milk, goat's milk, etc. In these cases a stain appears upon the teeth during the last part of the first year and in a few months these stained areas deepen into cavities often causing the teeth to be broken down to the gums by the middle of the third year. If the child has care the abscess which follows the growth of the cavity and the death of the pulp may be treated and the tooth filled and restored to usefulness.

My records show many such cases of children ranging from eighteen months to two and one half years of age. Each of these children needed besides such treatments several small fillings in other teeth which if neglected would have gone through the same destructive stages of inflammation of the bacteria invaded pulp, its death and suppuration, and later alveolar abscess, followed by a necrosed area of the alveolar process surrounding the root.

* Read at a joint session of the Los Angeles County Medical Association and the Los Angeles County Dental Association.

Possibly the busy physicians have overlooked these apparently little trifles without realizing how prevalent and how serious are the dead pulps in children's teeth. An abscess upon the finger is a serious thing but how much more serious it would be considered if its discharge were all carried into the system. Where there is one tooth with an abscess another will soon be in the same condition because mastication upon the approximal and occluding teeth becomes difficult and painful and the destructive bacteria burrow toward the pulps of these teeth with less disturbance from the food.

The blood is laden with pus germs absorbed directly by the tissues surrounding the roots of the teeth and also by the way of the stomach and intestines because the slightest pressure upon the tooth squeezes great drops of creamy pus into the food being prepared for digestion. Each tooth with an abscess reduces the resisting power of the child until when there are five or six or even seven, as one of my little patients of three and one-half years had, great quantities of pus are absorbed daily and very little resistance is made against the poisoning. Many a little grave, yes thousands of little graves hide the victims of septicemia, although the child appeared to succumb to some simple ailment.

The little patient suffering with seven abscesses was brought from a neighboring town and referred to me because the dentists who had examined her found her extreme irritability a hindrance in doing satisfactory work for her relief. In six weeks her teeth were filled, but for several months pus would reappear at some point of the necrosed areas about the roots. These all finally healed and at a recent visit after a year's absence her gums were perfectly healthy and her teeth all in service. A year and a half ago she passed through a serious run of typhoid fever where her physicians say she could not have escaped death had her mouth not been in a perfectly healthy condition.

Generally conditions of this sort are brought to the attention of the physicians first and if they do not recognize them the blame should rest at their door. Some do recognize the danger from the pus and extract the tooth, or teeth, without recognizing the injury they may be doing to the proper occlusion of the permanent set. Never extract a deciduous tooth except for its immediate successor is an axiom in dentistry, and should prevent the early sacrifice of these teeth which may easily be restored to health and usefulness by a few simple treatments.

The prolonged use of the nursing bottle causes the upper arch to grow high and narrow which results in a permanent lengthening of the face and malocclusion of the arches. The upper front teeth may project and prevent the closing of the mouth. In such cases the child may breathe through the mouth and is then subject to inflammation of throat and tonsils. The air passages of the nose become smaller and the growth of adenoids is induced. If the upper teeth are broken off very early the lower jaw, having no support, may sag forward and remain in the protruding position.

Where artificial feeding cannot be avoided the watchfulness of the mother may do much in the prevention of these troubles. The nose must be kept clean so that there is no obstruction to free breathing. The bottle must be taken from the child as soon as empty and pacifiers must never be used. The mouth must be kept very clean, and as soon as the teeth appear they must be kept free from stain. If the food is sweet, magnesia helps to counteract the acid, and to keep the stomach more healthy.

The deciduous teeth are for use during the time of greatest development of the child, and the shortest lived of these, the incisors, should last for six years. The molars which are replaced by the bicuspids should be in use for eight and ten years and any interference with the usefulness of these teeth interferes with the nutrition and growth of the child. It may not always show in the physical appearance but it always interferes with the nervous system. Children whose teeth have been badly neglected are frequently the victims of a serious breakdown which often becomes most apparent as they approach puberty.

Dentistry like education should be begun in childhood. If prophylactic work is begun before any stains appear upon the teeth and is carried along without interruption there is every reason to believe that there never will be even a roughening of the enamel of a single tooth. The exception to this rule is where the child is a victim of severe malnutrition due to some extreme febrile disorder as the result of scarlet fever, diphtheria, measles, etc., or syphilis, in which case the growth of the teeth may be stopped during the development of the enamel and result in atrophied teeth, those misshapen stunted teeth, so difficult to preserve and so much less useful because of the small surface of occlusion.

The first permanent molar is most often the victim of atorphy and may generally be traced to such a disturbance occurring between birth and the third year. The preservation of the first permanent molar is one of the great problems in dentistry. Erupting in the sixth year it is generally mistaken by the laity for a deciduous tooth. When the mouth is full of caries this tooth often begins to decay before it is fully erupted. When caries reach the pulp before the tenth year it is almost certain to be lost as the roots are not completely formed until nearly four years after eruption.

One of the greatest mistakes made is to think that this most valuable tooth of the second denture can be permanently filled before puberty. I can safely say that fully as many teeth are lost, as saved, when filled with silver amalgam in childhood. Prior to puberty we frequently find an acid saliva depositing the destructive coating of mucus upon the teeth similar to the conditions during the early months of pregnancy. Then the bacteria penetrate between the wall of the filling and the tooth and protected by the filling develop great colonies which undermine the tooth and penetrate the pulp while externally there is no sign until the whole tooth suddenly falls to

pieces like the collapse of a building with a weak foundation.

The teeth like the forests and rivers of the nation are one of our greatest natural resources and should be understood and conserved with equal care, as much of the health and happiness of the nation depends upon their usefulness. Their conservation is one of the simplest and easiest matters when faithfully continued from babyhood to adult life.

Then all fear of dental work is unknown because if as the result of an illness some small cavities do form they are filled before they become sensitive.

Where prophylatic work is practiced children not only lose all fear of the dentist but look forward to their monthly appointments as a pleasant form of entertainment. Prophylactic work being done once a month a constant supervision is kept of the oral hygiene practiced at home and any mistakes in the use, or lack of use, of the brush can be corrected.

Many pregnant women are allowed to suffer with their teeth when the dental work necessary for their relief would be far less injurious to the development of the child than the sleepless nights of pain which quickly sap a woman's strength.

The poisoning from abscessed teeth or pus pockets about the necks of the teeth very seriously hamper the proper development of the child, and such conditions have been instrumental in causing premature delivery.

Prophylactic work for women during pregnancy when begun in the earlier months is doing much to stop the rapid caries common during that time and prevent the incipient pyorrhea alveolaris to which later the mouth of the mother so often falls a victim.

If the fear and the pain of dentistry can be relegated to the past with other plagues and horrors another step upward will be taken in the progress of science and eugenics.

REPORT OF MASTOID CASES WITH SPECIAL REFERENCE TO DIAGNOSIS.

By J. M. STEPHENS, M. D., San Francisco.

We all meet with cases in which it is difficult to determine the advisability of an immediate operation. Also we have had patients recover without operation, though they showed many symptoms of a severe mastoiditis.

The two cases I wish to report are of interest mainly from the standpoint of age.

Case No. 1. Captain N., 69 years of age; occupation, sailor.

History: Three weeks prior to being seen had an attack of grippe. One week ago had pain in both ears, which increased in severity. A few days later the left ear began to discharge. Patient came to me April 23, 1909.

Physical examination: General condition poor. Patient pale and looked sick.

Ear examination: Left ear had profuse purulent discharge in canal. Membrana tympani: Perforation at lower segment with pus escaping. Mastoid: Tenderness fairly well marked over antrum and extending to the tip.

Right ear: Membrana tympani bulging in posterior superior quadrant. Mastoid tenderness over the antrum. Myringotomy was performed at this time with the escape of sero-purulent fluid. Deafness in both ears pronounced.

The patient was next seen May 19th, about three and a half weeks later, having been attended in the meantime by his general physician. Shortly after entering the hospital he had facial erysipelas, but at this time there was very little evidence of the rash.

Physical examination: Temperature 99.5° F. Pulse normal. The ears on examination presented very similar conditions: a profuse, thick, purulent discharge coming from the external meati and also from the perforations.

On the left side the membrana tympani was macerated, and there was some prolapse of the superior canal wall. Mastoid tenderness general, but not very acute. Patient could hear only a very loud spoken voice. An examination of aural smears from both sides showed streptococcus infection. Blood count showed a slight increase in the leukocytes, otherwise normal.

Two days later, May 21st, both mastoids were operated upon. On the left side the process was very extensively involved; bone pneumatic and all cells filled with pus and granulations. There was a peri-sinous abscess at knee, involving it for about one-half inch. Here the granulations were quite healthy in appearance, so they were left untouched. There was also an area of bone about three-fourths of an inch in diameter over the middle fossa which was found to be necrotic and removed, exposing the dura at this point. The dura appeared to be somewhat inflamed, though otherwise healthy. There was a thorough exenteration of all the cells done, and the wound packed with gauze.

The right side was also very extensively affected, all the cells being filled with pus and granulations. There was no exposure of dura except a small area of the limb of the sinus.

The patient's recovery was uneventful, hearing being practically normal.

Case No. 2. Mrs. W., 75 years of age; first seen April 18, 1908.

History: No previous ear trouble; general health good. Two weeks previous developed pain in left ear. Had been treated by general physician with ear drops and internal medication with no relief of pain.

Physical examination: Patient was unusually well preserved for one of her age. Membrana tympani grayish in color, bulging postero-superiorly; heard watch on contact. No mastoid tenderness elicited. A myringotomy was performed with the escape of a small amount of pus. Patient was sent home and put to bed. Patient was seen daily for one week, hot antiseptic douching of ear having been kept up during this period. The highest temperature recorded was 99° F. The discharge became very profuse and thick, still no mastoid tenderness. Pain in ear continued. Examination of aural smear showed short chained cocci. Blood examination showed no increase in leukocytes.

On May 1st, twelve days after first seeing patient, an operation was performed.

Operation: Usual T shaped incision made and bone exposed. About three-fourths of an inch posterior to the antrum there was a small perforation of the bony cortex, with a small amount of pus just beginning to escape. The cortex was generally removed, showing a large pneumatic process, with cells completely broken down and filled with pus. Post-sinous, tip, zygomatic and bulbar cells all filled with pus. The bone overlying a large part of the sinus was necrotic and very soft. After a thorough exenteration of all diseased cells, wound was packed with iodoform gauze. Recovery was uneventful except for an iodoform rash, which disappeared in four days.

One of the main points of interest in this case, especially after the operative findings, was the absence of mastoid tenderness. This was difficult to understand in a bone so extensively involved and especially with a cortical perforation.

The symptoms of mastoiditis are divided into general and local.

General: Elevation of temperature, headache, loss of appetite, etc.

Local: 1. Pain referred to the mastoid, sometimes radiating down the neck and to the ear.

2. Tenderness over the mastoid region.

3. Redness or edematous swelling.

4. Sagging of the posterior superior canal wall. Narrowing and congestion of the membranous canal.

5. Discharge from the middle ear.

6. Marked deafness.

7. Dullness on percussion is considered of importance by some.

Symptoms of cerebral irritation are considered as complications and will not be discussed; but occurring during the course of the infection, they are a strong indication for immediate operation.

Radiography of the mastoid has been advocated. While this may be of value in the chronic suppurations of the middle ear, it seems of no value in the acute infections, since it is not so much to determine if the mastoid process is involved as it is to decide whether or not the infection will subside without operative interference.

The increase in the polynuclear leukocytes is important when present. However, this is more frequently absent than otherwise. The importance of the specific micro-organism has been the occasion of much discussion, the streptococcus, pneumococcus, pneumo-bacillus and straphylococcus pyogenes being most important or most frequently found. The streptococcus is probably the most virulent. The streptococcus capsulatus has been found to be quite insidious in its invasion and progress. The pneumococcus seems to be very rapid in its invasion, giving rise to acute symptoms: the mastoid tenderness is general and pain severe; the early discharge sero-sanguinious and profuse; yet this is a type of mastoiditis which very frequently subsides without operative interference.

The infective micro-organism is only one factor in the weighing of symptoms, yet frequently it is the deciding element which tips the scales.

Pain in the mastoid region is variable, frequently decreasing and at times disappearing in a progressive mastoiditis. Its importance is dependent on one's ability to eliminate the neuralgic element which is so often found in the course of a grippe infection.

Tenderness: This symptom is probably the most generally depended upon in determining an operative necessity, yet its importance is variable—as shown in one of the cases reported—with a great amount of bone destruction there was no mastoid tenderness, and there are numerous cases of this type. On the contrary, in a case recently seen, the mastoid tenderness was very acute and general, persisting for four days; but from this time on becoming less marked, with a subsidence of the other symptoms; complete recovery occurring in about seven days.

Redness with edematous swelling over the mastoid is usually a late symptom of the disease and demands prompt surgical attention.

Sagging of the posterior superior canal wall seems to be generally considered an absolute indication for operation. Unfortunately, though, it is frequently not advisable to wait for the appearance of this very important symptom.

Quantity and character of the aural discharge is a most valuable symptom; especially is this true of the discharge as it escapes from the perforation in the membrana tympani. A similar symptom is emphasized by Politzer; i. e., the pulsation of the discharge coming from the perforation. He believes if this symptom continues for two weeks, an operation is indicated.

Unfortunately, it is impossible to arrange a group of pathognomic symptoms for every case of mastoiditis; however, there are in the great majority of cases a sufficient number present to enable us to decide upon the proper procedure.

There are some specialists who seem quite radical in that they advocate an operation on practically every case of mastoiditis in which tenderness persists for three days; but this is only one of a group of symptoms, and its importance varies. There are others, so-called conservatives, who wait for symptoms which indicate an extension of the infection beyond the mastoid process, or until the bone is thoroughly broken down. This procedure not only endangers the patient's life, but jeopardizes a successful outcome of the operation.

The true conservative attitude is the intermediate; namely: in those cases where the patient is seen early in the disease it seems advisable to wait a reasonable number of days, even with a persistence of mastoid tenderness, provided the patient's general condition remains good. There is more occasion for prompt surgical attention in those cases seen after the middle ear infection has persisted for some days.

RATIONAL SURGERY OF RETRO-BULBAR NEOPLASMS, WITH REPORT OF A CASE OF CYLINDROMA OF THE ORBIT, EXTIRPATION OF SAME AND PRESERVATION OF THE EYE.*

By P. DE OBARRIO, M. D., San Francisco.

For purposes of description and as a guide of diagnostic value, it is well to divide the orbital cavity into four quadrants or sections and bear in mind the bones forming its boundaries as well as the soft structures contained therein.

In a general way, the upper quadrant or vault of the orbit presents a larger space for the growth and expansion of neoplasms; the external quadrant comes next as to capacity, then the inferior and finally the internal. The nine openings of the orbital pyramid serve as gateways or passages for the transmission of motor, sensory and trophic

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nerves, arteries, veins, lymphatics, etc., to and from the eye and beyond the orbit and its contents to other portions of the face and accessory cavities.

The orbital contents are of such a variety that there are but few tissues not represented, hence it is proper to expect and it actually occurs that every variety of neoplasm has been found and described, both malignant and benign, some relatively frequent, others extremely rare.

From the standpoint of embryology we should expect this also to be true as in fact the orbit and orbital contents develop from the epiblast and mesoblast and all tumors both malignant and benign are the offspring of these embryologic strata, excepting the non-malignant adenomata and the malignant columnar-celled carcinomata which are of the hypoblastic epithelial variety.

Roughly speaking, the field that occupies our attention comprises then a rigid conical-shaped bony container formed by seven cranial bones, lined by a contenious periosteum pierced by nine foramina or channels and lodging the lachrimal gland and adnexa, the ocular muscles, orbital fat and cellular tissues, arteries, veins, nerves, lymphatics, a nerve of special sense and the eye proper which is a world in itself. All of these anatomical structures may and do give rise to neoplasms. In addition we have the metastases from other growths elsewhere, as well as invasions from adjacent cavities. It is easy then to foresee the great variety of simple tumors as well as the perplexing number of compound neoplasms that you may have to take into consideration in attempting a diagnosis. The intricacies of the problem are forcibly brought to one's mind after one has made one or more efforts at diagnosis with its attending surprises, or witnessed the brilliant failures of those with unlimited material and experience at their command. I will abstain then from attempting a specific list of these growths and only mention in a broad general way, that as we have to contend with a rigid container and soft contents, you should likewise expect the presence of hard solid tumors such as osteomata and enchondromata, or semisolid tumors as fibromata, neuromata, lypomata, etc., and liquid or fluid such as angiomata, cysts, etc.

Having thus briefly outlined the possibilities of orbital new-growths, we are to review next the general symptoms that we are to expect from their presence in the orbit.

I catalogue these symptoms as follows:

1st. Exophthalmus.
2nd. Impaired function.
3rd. Presence of visible or palpable tumefaction.

I place the exophthalmus in first place because I do not conceive the existence of a new growth seated at the orbit without the presence of this symptom, although the neoplasm be not visible or palpable or even of small dimensions, for if the orbital contents are increased in size or displaced by its presence, the exophthalmus will always be detected after careful investigation, although at times it may be a difficult matter requiring the use of the ophthalmometer.

The impaired function will be as regards motility and as regards acuity of vision. Regarding motility, it is a well established general principle that it will be diminished or impaired in the direction of the seat of the growth. As regards acuity of vision, it will be diminished in direct proportion to the volume of the neoplasm as well as in direct ratio as to its location whether its greater bulk is situated posterior to the equator of the eye or not; the symptom being most pronounced the more posterior the situation.

In speaking of the seat of the growth it is well to bear in mind that its location in the orbit will be diametrically opposite to the direction of the exophthalmus, and as a logical consequence it is well to divide exophthalmus into the following varieties:

Fig. 1. Aspect of patient before operation.

A.—Vertical, comprising upwards and downwards displacements.
B.—Horizontal, comprising inwards and outwards displacements.
C.—Diagonal, comprising four varieties: upwards and inwards, upwards and outwards, downwards and inwards, and downwards and outwards.
D.—Direct forwards.

Each one of these varieties has a meaning according to the general rule I have laid down above, and by reviewing the anatomical elements that are contained in each of the four quadrants of the orbit, you gather an index as to the possible nature of the new growth.

Following this classification, it is fair to assume for instance, that a forward displacement of the eye with a slight upward and outward deviation is an indication of a tumor of the optic nerve. Likewise, a downward displacement would indicate the presence of a growth at the vault or adjacent tissues; an upward displacement would have a similar significance as regards the lower wall of the orbit. An oblique displacement downwards and inwards would be suggestive of a new growth of the lachrimal gland or adjacent bony wall, whilst a displacement downwards and outwards would be strongly suggestive of frontal sinus involvement in

the shape of an exostosis, for instance; an outward displacement should call your attention to an affection of the ethmoidal sinuses, and a similar reasoning should be properly applied to each one of the varieties I have enumerated above.

I will mention in a passing way, bilateral exophthalmus such as occurs in the exophthalmic goiters, or that consequent on thrombosis of the cavernus sinus; pulsating exophthalmus, and orbital angiomata. Cystic collections must be included, but I omit panophthalmus and such neoplasms as invade the orbit by propagation from within the eye as they are beyond the scope of this work; also emphysema orbitaria or the traumatic hematomata which can not be properly considered.

The means of investigation that we have at our command, in the presence of a given case, are such general and valuable principles as: history, inspection, palpation, percussion, transillumination, focal lighting, fluoroscopy and skiagraphy which should be always employed whenever obtainable as giving information of the greatest value. Another very useful aid is the aspirating needle which should never be forgotten in all such cases in which there is the slightest indication of the presence of fluid, even if after palpation you are impressed with the resistance of the growth, as it happens at times that the liquid is enclosed in a non-elastic container under relatively high pressure. The aid of the ophthalmometer in the doubtful cases of eye protrusion is of such value that it should never be neglected, being an extremely useful and practical procedure.

It is well to follow all these measures in a systematic manner, much in the same way that a physical examination is conducted in any other region of the body in order to ascertain the nature of the case before you or reduce to a minimum your possible failure of diagnosis.

Having arrived now at the question of treatment I will pass in review only such general medical measures as are applicable to gummatous affections, or the electro-therapeutics of the angiomata and of the muscular paralysis which permit of a forward displacement of the eye, and confine myself to surgical interventions proper which is the motive of this work.

In order to use some method in classifying the great number of procedures at our disposal, I will group them into several categories comprising:

A.—Extirpation through soft parts with preservation of the eye.

B.—Extirpation through a bony flap with conservation of the eye.

C.—Extirpation with ocular enucleation.

D.—Excenteration of the orbit, which may be complete, or subconjunctival or plastic.

Of these four modes of procedure I wish to lay particular stress on the first method, that is to say: the extirpation through soft parts with preservation of the eye, as to my mind, in the greater majority of cases one should be able to obtain satisfactory results without resorting to the more radical methods that I have catalogued above. It is my desire to be very emphatic right here, though, to avoid any misinterpretation, and make myself perfectly understood, that at no time would I sacrifice thoroughness to conservatism, but I should always be rational on principle, and eventually as radical as the particulars of every individual case would demand.

I am perfectly convinced, and I furthermore maintain, that in order to enter the orbital cavity once it has been invaded by a neoplasm, and at the same time not injure the eye, and furthermore obtain sufficient space for all practical purposes, that the incision of choice should be at about one to two centimeters from the orbital margin and parallel to it, same to be situated at any section of the circumference, at the point of greatest protrusion.

The next indispensable point is a careful and tactful dissection, whereby one should be led to a point of cleavage in all encapsulated tumors and by following same with a blunt instrument you will find extirpation greatly simplified. The following step is the inspection of the seat of the neoplasm by direct vision and digital palpation whenever practicable. A good many cases of alleged recurrences are due to negligence of this detail.

Fig. 2. Aspect of patient thirty days after operation.

I furthermore insist that the value of this method is based on the fact that in all tumors of the soft parts or of the wall, excepting perhaps those arising from the ocular muscles, or from the optic nerve, the expanding impulses of the growing neoplasm gradually, but most effectively, exert their influence in all directions; but as the osseous container is non-yielding, the soft parts will be displaced towards the point of least resistance, or in other words, forwards as well as diametrically opposite to the point of its attachment. As a direct consequence of this expansion the tumor will dissect its way outwards and meet you half way, so to speak, in your effort to extract him. If such a tumor be not of a decided malignant nature and therefore not invading all structures in its vicinity, there should be no reason to employ any other routes than the ones I have described.

Such growths that are located at or forward of the equator of the eye, make their appearance early at the orbital margin and their recognition and removal is rendered relatively easy.

Beyond the equator of the eye, the digital or

visual recognition of these growths is a matter of greater or less difficulty in inverse proportion to their volume.

In all cases of exophthalmus, the optic nerve will be rendered tense, the muscles will be put upon the stretch together with the ciliary nerves, arteries and veins; the orbital fat will be crowded out of the way as well as the lachrimal gland. All these structures coming under the category of soft tissues, are naturally more or less elastic and yielding, principally under the stress of a slow process, and upon this faculty is based the great advantage whereby the eye may be dislocated to an apparently alarming or dangerous degree in order to suit one's needs in the course of a surgical intervention without harmful results.

This faculty of relaxation of the orbital tissues is present to a superlative degree in the rabbit's eye, as it is possible to dislocate same to the extent of placing the lids behind the globe by merely pulling the eye forward without causing the slightest trouble or reaction. This manœuvre is familiar to all of you who have done any experimental work with these animals.

In entering the orbit through the soft parts, the method of going through the lids only, is adopted by Maisonneuve, Acrel, Halpin and others.

Entering through the conjunctiva without tenotomies but with optical neurectomy, is adopted by Knapp, whilst Rohmer uses the same route but with tenotomies.

The combined method, passing through both the lids and the conjunctiva, is the third way of entering the orbit, and a very satisfactory one according to the nature of the case.

Any one of these methods should be sufficient to accomplish satisfactory results in the great majority of cases.

There are, however, a great number of surgical procedures comprising as a basic principle the formation of a bony flap which I must mention briefly; they involve:

A.—Resection of the superior orbital wall.
B.—The inferior.
C.—The internal.
D.—The external.

I do not wish to go into the details of these operations for fear of lengthening this paper too much, and because the primary intention is to demonstrate how you may extirpate large neoplasms without their need. I will review them, however, very briefly as a matter of system.

The resections of the superior or of the inferior orbital walls have apparently not had a wide range of usefulness, as little mention is made of them in the literature. As regards the resections of the outer and of the inner walls on the contrary, a considerable number of procedures have been adopted or suggested, all of which may have their place in accordance with the nature of special cases that must be judged on their merits.

The principal operation for the removal of the outer orbital wall is that of Kraunlein, which has been modified in several ways. Another procedure is the removal of the maler bone. One of the modifications worthy of mention is that of Lagrange of Bordeaux, which consists in mobilizing the outer orbital wall with the view of dislocating the eye in that same direction after opening the conjunctiva at the inner angle and approaching the orbit through this angle. It is claimed by the author, and it stands to reason, that it gives a very large space to work in.

There are also several procedures for the exposure of the ethmoidal cells and frontal sinus that incidentally open the orbit in an extensive manner unilaterally or bilaterally, such as the operations of Maure, of Gussenbauer, Killian, etc.

The operations of orbital excenteration and enucleation find their place in such extreme cases as urge such radical procedures.

I have already mentioned to you the method I have adopted, consisting in a semi-circular incision at the orbital margin or better removed one or two centimeters from same, to be located at the seat of greatest tumefaction and comprising in one move all the soft parts down to the bone, as an eminently satisfactory way of reaching the orbital cavity. By this procedure it should be possible to extirpate a great majority of growths without further tenotomies but by careful dissection and by gradual dislocation of the globe.

As an illustration of the foregoing statement I have the honor to present to you a report of a case of large cylindroma of the orbit operated upon by me without tenotomies or bony resection or opening the conjunctiva, and preserving the eye in its entirety with all its functions.

The month of August, 1909, there was admitted at Saint Thomas Hospital in the City of Panama, of which institution I was the Director, a patient of Indian extraction, of dark complexion, about 20 years of age, single, and a laborer by occupation. He was directed to my general surgical ward where I saw him next morning.

History: After a general investigation, I could ascertain no specific history nor hereditary data of any consequence.

The patient claims that three years back he received a piece of coal in the left eye and gives the history of a corneal ulcer which healed after a time. This detail is of importance only because of the fact that at about the same time he noticed that the eye began to protrude from the orbit until it had reached the advanced state that he presented then. The growth had been developing, according to this, about three years.

Examination: The right eye was normal.

The left eye presented a very marked exophthalmus with a decided deviation directly downwards in a vertical plane to the extent of about three-quarters of an inch below the level of the right pupil and a very small outward deviation as well.

The upper lid was very prominent but without any inflammatory symptoms and it had the consistency of a lypoma.

The lower lid, on the contrary, was very much crowded and wrinkled. The palpebral conjunctiva was normal.

The bulbar conjunctiva presented a very marked engorgment of its vessels, principally the veins, due to the compression. There was no loss of sensibility in any part of the organ. The cornea, iris, lense and vitrus, normal. The disc was hazy and presented a very marked vaso-dilatation such as you would expect from compression.

O. D. V. 20/20 Emetrope.

O. S. V. 20/40 with a very irregular astigmatism from his corneal opacity as well as from the change of form due to the compression. His sight was, however, most affected from his optic nerve compression.

Motility: His eye was practically fixed in the orbit, permitting only very slight motions in every direction except upwards.

Pupillary reaction to light, convergence, and accommodation was very sluggish. Projection and orientation was correct although sluggish.

On palpation, the whole of the tumefaction of the upper lid was of an even consistency very much like the resistance of a lypoma. At the middle of the upper orbital margin, and rather within the orbit, I could feel a very small projection about the size of the tip of the little finger that was very hard and unyielding. This fact, together with the very pronounced exophthalmus led me to believe that the tumor was of rather large dimensions and located principally posterior to the ocular equator. The exophthalmus was not reducible by manual palpation, neither was there any pulsation to be felt.

A tentative diagnosis was made in the direction of a fibroma or an enchondroma, or an osteoma, or perhaps a lypoma or again some mixed benign form as the patient had no pain and at the time, no inflammatory symptoms.

Treatment: Under general anesthesia and previous the routine surgical preparation, I proceeded to make a large curved incision parallel to the orbital margin and a little separated from same, extending from the inner angle to the outer. This incision extended down to the bone. After careful dissection, I located beyond the orbital margin above, a small encapsulated rounded protrusion which I followed with blunt dissection to the very apex of the orbit. I separated it from the muscles, periosteum and optic nerve, and extracted it in its entirety. As you may imagine by its size, it was necessary to dislocate the eye to an apparently alarming degree. Nevertheless it assumed its normal position. The recovery was uneventful except that upon removing the first dressing in twenty-four hours, I found a considerable edema of the conjunctiva and a somewhat opalescent cornea, which I attributed to faulty circulation through the conjunctival edema, and which cleared up the next day after a few linear scarifications of the conjunctiva.

Macroscopy: The photograph shows a roughly oval-shaped encapsulated tumor almost as large as a hen's egg, measuring 5 cm. in length, 3½ in breadth and 2½ thick. It lay horizontally from before backwards in the orbital vault with its small end forwards and four-fifths of its bulk posterior to the ocular equator. Through a small rent in the capsule I could detect the contents that appeared like colloid granular material with some very small globules resembling epithelial pearls.

Microscopy: The specimen was hardened in formaline and from a wedge-shaped section down to the center, all microtome sections were made. Generally speaking, the tumor presented evidences of active degenerative evolution. The stroma presented a marked myxomatous degeneration towards the surface, whilst in the center no such change was present. The stroma held together a variety of cells or cell groupings represented by the following types: vesicular cells; cellular nests; atypical vesicles; cellular "pearls" and portions of hyaline or colloid material. The cellular nests are formed by large polyhedral cells somewhat similar to a squamo-cellular epithelioma. The center of these nests present evidences of a more or less complete colloid or hyaline degeneration which takes readily the eosine stain, and again at times an opal and orange red tint suggestive of keratinization.

The cellular nests and the "pearls" are frequently surounded by connective tissue and at times by vesicular cells that differ very little in form and size from the nest cells grading off gently towards the stroma cells with which they eventually group by changes of form and stain. The colloid material was to be found also in the center of the atypical vesicles as well as in the nests.

The vesicles were covered by one or more layers of cuboid or flattened cells, which are identical with those of the nests and those forming the greater part of the cellular element of the tumor. With certain frequency these were to be found in the center of colloid material groupings of concentric cells similar to epithelial cells. In one large atypical vesicle was observed a granular coagulated substance with very few red cells but with a considerable amount of desquamated endothelial cells.

Actual size of tumor 5 inches in length, 3½ inches in breadth and 2½ thick.

There was only one fully developed blood vessel to be found.

Taking all this into consideration, it is to be observed that there are three well defined elements in this mixed neoplasm that lead to a diagnosis:

1—The myxomatous degeneration of the stroma.

2—The marked tendency of the cellular element to form cylindrical lymphatic channels which serve as avenues of nutrition.

3—Its endothelial origin.

The fact of having these three distinct elements would justify the title of "Myxo-Linfangio-Endothelioma" which is a cylindroma.

Through the courtesy of Dr. Darling of the Ancon Laboratory, a few sections were submitted to the consideration of Prof. Welch of Johns Hopkins University who was of the opinion "that this tumor had probably originated in an embryological

nest; that it resembles very much such mixed tumors as are observed in the parotid gland; that the glandular element predominates although there are present epithelial cells and myxomatous degeneration."

The functional examination was perfect with the exception of the vision which was 20/50 as was natural to expect due to the optic nerve condition brought about by the tumor compression. The motility, convergence, etc., and esthetic result I believe is unusually good.

After a lapse of two years there has been no relapse and the good result has been uniformly maintained.

Discussion.

Vard H. Hulen, M. D.: I believe the cases of orbital tumors situated posterior to the bulb are very rare, and it is both interesting and instructive to hear such excellent reviews of the subject as that we have just been favored with. In my private practice I have had but one such case in 17 years, and in my opinion this patient would have required a Kroenlein operation. I do not understand Dr. de Obarrio to recommend such an incision as made in his case for all orbital tumors, for I feel sure that a Kroenlein might in some cases be better, in a tumor of the optic nerve for instance. I believe the location and presentation of the growth will very greatly determine the site of the incision. This case that Dr. de Obarrio has so satisfactorily presented to us was an ideal one for the method of removal used, the presentation of the tumor indicated the place for his incision and being encapsulated it was the more easily removed, in spite of its size, by the method chosen than in any other way.

P. de Obarrio, M. D.: It is self-evident that with an incision located at the upper border of the orbit you could not conveniently reach a neoplasm situated at the floor of the orbit, therefore I have insisted very specially in my paper that the curved incision should be at the seat of greatest tumefaction, obtaining in this way a very ready access to the orbit. Dr. Hulen's contention that in such cases where a doubt exists as to the location of the tumor that he thinks it would be necessary to enter the orbit through a bony flap, I may state that I have explained in the course of my paper that any tumor in the orbit will give rise to an exophthalmos no matter how small this tumor may be and that the direction in which this exophthalmos is produced will show by its very nature the location of the tumor. If, however, it should happen that there is any doubt on this question it is a safe procedure to enter the orbit through the external angle, using the same curved incision that I have already described. As to the possibilities of this method of entering into the orbit it seems to me that it has received ample justification by the very nature of the case which it has been my privilege to report to you this evening, as the successful removal of this exceptionally large orbital tumor with such unusual results both functional and cosmetic, I feel certain would not have been possible to obtain through a bony flap, which of necessity would produce more or less deformity. As further evidence of the value of this procedure you will permit me to quote to you Prof. Lagrange's statement in the course of his remarkable work on the subject of orbital tumors, taken from the Proceedings of the French Ophthalmological Society at its twentieth annual meeting. Prof. Lagrange says ". . . it is at the level of the external angle that one should incise the soft parts. In fact there exists at this level a means of access to the orbit that is most remarkable. . . . and the finger may be deeply introduced in the superior external and inferior walls of the orbit. The exploration is even rendered easy when the patient presents a marked exophthalmos which is generally the case for all the orbital tumors and very particularly in the case of tumors of the optic nerve."

I will quote to you now one of the three cases reported by Dr. Rollet, of Lyons, France, in the Transactions of the French Ophthalmological Society for the year 1907. In all of said cases the tumors were extracted through incisions of the soft parts without bone flaps. Dr. Rollet says, "Instead of making an external incision which was successful in my previous case, I preferred in my last one to make a large internal orbitotomy and I was able by this method to remove a sarcoma of the optic nerve. I divided the optic nerve anteriorly behind the eye and posteriorly as far back in the orbit as possible and I extracted this tumor 33 millimeters in length by 17 in breadth."

It is evident then by the further experience of these authors that if by the use of this incision, a ready access may be had to the optic nerve and soft parts beyond, as well as permitting of extensive digital exploration, that its range of usefulness is all that can be desired in the presence of exophthalmos. It is probable that you would not obtain the same result in the cadaver if there is no tumor, as the eye and soft parts have not been previously displaced.

A GENERAL CONSIDERATION OF SOME POINTS OF INTEREST IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS.*

By GEORGE D. CULVER, M. D., San Francisco.

Schaudinn and Hoffman's discovery of the spirocheta pallida, Wassermann's application of the complement fixation test to syphilitic serum, and Ehrlich's production of salvarsan are now medical history. It is history of the sort that does not lighten the physician's labor, but does make it more interesting. All these factors are the result of laboratory work, and lead more and more to depending upon laboratory methods in the diagnosis and prognosis of syphilis. Technically speaking, a record may be considered incomplete without finding the spirocheta pallida in the early lesions or without a positive Wassermann finding in either early or late lesions. But practically speaking, the majority of cases that the dermatologist sees do not require either of these for a positive diagnosis.

It is when doubt arises that finding the microorganism or getting a positive Wassermann test is of such great aid and comfort. It is a very satisfactory solution of a doubt to find the specific spirillum in the serum expressed from a sore, either genital or extra-genital. It is not such a difficult thing to find this little corkscrew organism in many of the early lesions, such as the chancre, the roseolar rash, mucous patches or in the papules, as it is frequently present in large numbers, particularly in the serum obtained from moist condylomata. It may be found in the fresh serum with the dark field illumination, or in

* Read before the San Jose Medical Club, December 13, 1911.

stained smears. This serum should be expressed from the deeper portion of the lesion, and should be as free from blood cells as possible. It is more difficult to find the spirocheta pallida in the serum from a lymph nodule. Even when it is expected from the nature of the case and the lesion present that the micro-organism should be easily found and we meet with failure, we should not be led astray by such failure, but should continue to trust in those clinical symptoms that were found to be so valuable before either its discovery or that of the Wassermann reaction. A typical chancre should be taken at its face value, no matter whether the spirocheta pallida is found or not. Furthermore, when the specific micro-organism is found in a lesion of the mouth, it does not mean all that it means when found elsewhere. In the mouth, unless the specimen is taken with every precaution, the spirocheta dentium, which simulates it almost perfectly, and is found in great numbers about the teeth, may cloud the diagnosis. Further back in the mouth or near the tonsils there is less likelihood of meeting this trouble, particularly if the surface is well cleaned with salt solution and curetted, before serum is expressed from the deeper portion of the lesion.

The Wassermann test is more frequently useful to the neurologist, the internest and the surgeon, than to the dermatologist. But many instances occur in our work, in which doubtful lesions are present and in which the spirocheta pallida can not be found. The finding of a positive Wassermann may tightly clinch the diagnosis, and in some cases even when specific treatment has failed to bring about a change.

Two instances exemplifying the value of the Wassermann test came to my attention recently. One was that of an extensive lesion involving the whole tongue of a man over sixty years of age. Clinically the picture was quite distinctly that of an epithelioma, but histologically it was a granuloma. The blood from this patient gave a positive Wassermann reaction that fortified the resolution to give a rigorous antiluetic treatment. The other was that of a young girl without an obtainable venereal or luetic history, who presented a lesion in the roof of the mouth, which, from its appearance, might have been tuberculosis or some other infection. Curiously enough, she had symmetrically enlarged submaxillary and cervical glands, a rare finding in late lues. The lesion on curetting had the consistency of a gumma, and histologically was a granuloma, but finding the positive Wassermann was just the necessary additional proof.

The blood may give a positive Wassermann when the trouble for which the patient consults the physician is not due to syphilis, as many a patient seeking advice for some other trouble has had syphilis in the past, and still has the anti-bodies in his blood. Just here comes a most important point in practice. A Wassermann test of the blood should not be done till after a thorough clinical examination of a patient, lest it color, as when positive it is almost sure to do, the estimate of the clinical findings. Should a patient consult you for some indefinite condition, and you find that his blood gives a positive Wassermann, it would not be right to base your whole diagnosis on that fact. It would be better to look more carefully for the possibility of a coincident condition. Diagnoses based wholly upon laboratory findings are often misleading.

If one is reasonably confident that a luetic condition is present it would be wrong to withhold anti-syphilitic treatment simply because the Wassermann test is negative. In other words the clinical finding is to be preferred to the laboratory finding, especially when the laboratory finding is negative. Not infrequently patients with fairly definite evidence of lues give negative Wassermann tests, both of blood serum and cerebro-spinal fluid, but react to specific treatment. An example of this is that of a woman with a serpiginous lues involving the nose and both cheeks, distributed in the area usually involved in lupus erythematosus. Although the Wassermann tests were negative, anti-syphilitic treatment brought about healing in a very few weeks.

It is well to remember that a gumma in the nose or in the naso-pharynx may lead one astray histologically, as sections of the tumor mass may closely resemble sarcoma. Sections from the Schneiderian membrane may even simulate an epithelioma. In the great percentage of cases with tumors so situated, if luetic, the Wassermann reaction of the blood serum will be positive, and even if negative, one will not greatly jeopardize the patient's chances by first resorting to active specific treatment.

It is not necessary in all instances to have the blood tested before giving salvarsan, and it is not fair to determine upon the use of this drug in all cases that give only a positive Wassermann reaction and nothing else. If negative, the reaction may prove nothing, and if positive, though far more important, it should be considered as only one element of proof. Sometimes the blood will not give a positive reaction when the spinal fluid will, and this point is to be considered in doubtful cases.

It must be stated that the more one follows this intricate laboratory test the more help one will gain from it, and the more faith will one have in its reliability. As a control of treatment it is excellent, the best we have, and it proves most when it is continuously negative for months or years after a thorough course of treatment.

The type of case generally seen by the dermatologist is one presenting some visible evidence of disease, and occasionally a combination of other symptoms, including almost anything that may arise as a result of syphilis. It has been customary in my work, and I think will continue to be so, when a patient presents himself for treatment, first to consider the old lines, and unless some definite indication presents for the use of salvarsan, to start with either mercury or kali iodid alone, or

with the two combined, and the method of administration is determined for the individual case.

In early cases mercury alone is generally the weapon of choice. I do not attempt to get away from the rubs, as this is such excellent treatment when it can be carefully carried out. The injection method is as good, and is preferable in some cases. I have found the neutral salicylate of mercury in albolene to be an excellent form for intramuscular injection. One to two grains in a ten per cent. suspension is injected at eight-day intervals into the buttocks. This causes pain, but I have never seen an abscess result, probably because the preparation is slightly antiseptic. Women take it particularly well. I recall two who were persistent in their demands for injections, even when it was time to stop giving mercury. The intravenous use of the bichlorid in normal salt solution is very effective, but it has to be given every second day, which is sometimes an advantage, but not always. When it is necessary to get a quick result, the injection method is, no doubt, the one to be chosen. Other cases react better to mercury by mouth, sometimes yielding best to the mildest forms and small doses, as of gray powder or the bichlorid or protoiodid. One can not limit oneself to any single form, but must aim to fit the patient and the condition.

I have given this consideration to mercury because I believe it is still the drug of choice for a cure, and that salvarsan is pre-eminently a weapon for symptomatic treatment, and as such it takes its place among the marvelous things in medicine. We have occasion to use it in selected cases, ranging from the initial lesion through all of the stages into the latent conditions, which are so numerous as a result of infections with the spirocheta pallida.

It not infrequently happens that a man who has had the disease presents himself for a blood examination, but without showing any stigmata. In such a case, a positive Wassermann alone is not to my mind sufficient justification for the administration of salvarsan. It is justifiable in many cases to administer this drug, but a course of mercury will probably accomplish the result desired without the salvarsan; and if the salvarsan is given I think it should be followed by a course of mercurial treatment.

I have yet to see a case of syphilis, no matter how early the chancre is diagnosed, in which I could feel justified in considering the disease aborted by the use of this remarkable new remedy. If an absolute diagnosis has been made by finding the causative micro-organism, even if it is too early to get a Wassermann reaction, as so frequently happens, I think we are not justified in denying the patient the usual course of mercury. Before the introduction of this wonderful remedy, incontrovertible causes of luetic infection were known to present only the initial lesion, and to have gone through life to some happy or unhappy end without further evidence of the disease. Instances which strengthen this view present themselves constantly. An elevator boy consulted a physician for a sore in the usual location, noticed a few days previously. This was in January, 1911, very early in the use of salvarsan on the coast, when the biggest claims were being made for an absolute cure. He was given a dose of salvarsan subcutaneously below the shoulder blade. The sore disappeared quickly. The dose was repeated in February. In April he was told he was safe; that the disease had been aborted. I saw him first the latter part of May, when he had many mucous patches in his mouth. The instances previously mentioned of a man with an extensive involvement of the tongue that was clinically the picture of an epithelioma, and whose blood showed a positive Wassermann reaction, gave a history of having had the initial lesion, and that alone, thirty-seven years before. He had received three months' treatment, when he was pronounced cured. The disease had been latent for thirty-seven years, and had he died before this year, a record of his case might have been considered as the record of an abortive type, aborted with three months' treatment. We must consider that the same recurrence may happen after the administration of salvarsan, and surely this is less liable to happen if the salvarsan is followed by a good long mercurial treatment.

That the new remedy does not as a rule cause a more rapid disappearance of the secondary evidences of syphilis than does mercury is quite generally admitted. In following parallel cases I have been impressed even more deeply than ever by the marvelous rapidity with which systematic, carefully conducted mercurial rubs will cause the disappearance of all evidence of the disease. We are so apt to forget how wonderful the action of mercury in syphilis really is.

As salvarsan has such a definite effect upon the spirocheta pallida, and causes its rapid disappearance from lesions in which it is easily found, it is important in the treatment of early lues as a sterilizing agent to render the unfortunate less liable to spread the dreaded disease. As an example of what I mean I would cite the case of a young girl in her teens, who recently presented herself with a papular syphilid covering the face and scalp, and confluent on the back and chest, and suffering from severe sore throat. She was a distinct menace to those with whom she came in contact, and could not be trusted to guard against spreading the infection. For this reason she was given 0.60 grams salvarsan intravenously. I believe the best treatment in this case to be mercurial rubs. The effect of the salvarsan was not as rapid as we might have expected from the rubs in the beginninfg, and two weeks after the injection the change in the girl's condition was not marked. Within a few days after beginning rubs, however, the change was much more distinct; her sore throat completely disappeared, showing the rapid effect of the mercury. This use of mercury following salvarsan is preferable to repeating the latter within too short a time.

Prostitutes and other loose characters can be made less of a menace as spirochete carriers by being subjected to salvarsan injections. The interval between the time when this drug is given and the time when mercury is begun should be short; best, in most instances, only a few days.

In such cases as the epidemic of chancres of the

lip recently reported by Shamberg in Philadelphia, in which one young fellow was the source of infection of six girls and one boy, at a kissing party, the use of salvarsan is indicated.[1] The rapid healing effect which salvarsan has upon any syphilitic affection of the mucous membranes will, in just such instances, quickly lessen the danger of spreading the infection.

Too much praise cannot be given Ehrlich's discovery for its effect upon stubborn, resistent, luetic lesions. A palmar syphilid that has for months resisted rubs, injections, mercury and potassium iodid by mouth combined with hygienic and systemic treatment, can be changed for the better within twenty-four hours with one dose of salvarsan intravenously administered. The whole palm or sole may be smooth in a few days, and the patient will think the physician a wonder. It is the drug that is the wonder. Like all other things that come in groups, recently three such cases with involvement of the palm or sole or both, presented themselves, and all healed marvelously quickly after a single injection of salvarsan in each.

Affections of the mucous membranes may be as stubborn as those of the palm or sole, as in one instance within the last few months in which the man gave a history of an infection four years ago. He had had almost continuous treatment, with only short intervals, during the last two years, and interesting to relate, at the end of each interval almost the whole mouth would break out in a monster herpetic eruption, which was almost deadly in its interference with eating, and was with difficulty controlled by mercury. One dose of salvarsan cleared this up almost completely in four days. Improvement occurred in less than twenty-four hours. He has been free since the treatment.

Syphilitic papillomata and cutaneous gummata yield wonderfully kindly to salvarsan, and it is a boon to the patient with malignant syphilis. Many a perforation of the hard palate can be prevented by the use of this remedy.

Contrary to the experience of some who are using salvarsan quite extensively, I have not found it necessary to repeat the dose very many times in any one patient, but it has been necessary to give mercury after the salvarsan. We do not yet know that a cure is possible with one, two, three, or even seven doses, and I think it a serious error to consider it an absolute specific.

A most interesting and instructive lesson will, no doubt, be learned by all of us, that there are some cases which will not yield readily to mercury and kali iodid, and will not yield to the additional use of salvarsan, but will in the end react most pleasingly to mercurial treatment or mixed treatment after the use of this drug. I saw this result from the use of atoxyl before we knew salvarsan, in a patient with chancre of the lip and such severe joint pains that he was confined to bed several weeks. Mercury alone did not relieve him and kali iodid had no effect. After three injections of three grains each of atoxyl he improved rapidly under mercury. Nearly two years later this same man had resistent lesions of the mucous membranes which yielded readily to salvarsan. It would seem that the wonderful tonic effect of the arsenic renders the patient more amenable to the effects of mercury and kali iodid. I firmly believe we are doing a great injustice in not following or attempting to follow this method of procedure before repeating the administration of so intense a remedy, and then should it fail, a second or even a third dose of salvarsan is not only indicated, but is almost obligatory.

I should like to express a thought that has been impressed upon me that we owe it to the patient not to become so enthusiastic about salvarsan, and not to depend so wholly upon it that he will lose his confidence in this remedy. I mean this: the layman has already learned that salvarsan does not always cure, and that it has to be repeated, and he knows that it sometimes fails completely, and just in proportion to what wonderful things he was led at first to expect he will lose faith in the new drug and consider it far less important than it deserves. I speak of this because only recently two patients with conditions that have stubbornly resisted the old line of treatment have objected to the use of salvarsan for these reasons, and one dose in each case would in all probability bring about complete healing. Might we not prevent this loss of confidence in the remedy by the systematic use of the combined specifics?

As a last word, I believe that salvarsan is one of the greatest drugs we have in medicine, and it increases rather than lessens my respect for mercury and iodid of potash. I recall a story told by my colleague, Dr. Douglass W. Montgomery, in reference to kali iodid. Ricord, with some friends, had a box at a theatre in Paris, when one of the noted prima donnas sang. He applauded heartily with the rest, but continued his applause even after the others had stopped. His friends wondered at this and asked him the reason for his enthusiasm. He answered, "My appreciation is not wholly for the fair lady, I am applauding iodid of potash."

[1] An Epidemic of Chancres of the Lip from Kissing, by Jay F. Schamberg, Jour. of A. M. A., Sept. 2, 1911.

AN EXPERIMENTAL STUDY OF A REMARKABLE CASE OF NEPHRITIS WITH EMPYEMA OF THE CRANIAL SINUSES AND MILKY SERUM.

(Contribution to the Literature of Fat Metabolism.)

By CLARENCE QUINAN, M. D., San Francisco.

In the course of a series of experiments upon the blood and urine proteins of a nephritic man, a peculiar lipemia was brought to light. The main facts observed during a biochemical inquiry into this condition are here brought together.

History: M. V., aet. 32, a Russian, by occupation a cook. The family history is negative. His father, mother, six brothers and one sister are living and well. Until about the twentieth year his personal history was uneventful. Prior to that age he enjoyed vigorous health. He has never had any

venereal infection. Some time in his twentieth year there was a purulent discharge from the left ear which entirely diappeared after a radical mastoid operation. Twelve years after this operation, in 1910, he first noticed swelling of the ankles. Rest in bed was ordered, together with a diet of milk, eggs and bread. At the end of three weeks the dropsy showed little improvement and he was advised to enter a hospital. The succeeding four months were spent in three different hospitals. In the first, he received diuretic treatment, and his food consisted of fried ham, or bacon, with eggs and milk three times a day. Elsewhere, he had sweat baths, and milk diets, variously modified, but he lost weight steadily and returned to his home very weak. The dropsy persisted.

He asserts that for a number of years he has been subject to nose-bleed, periodically, especially in warm weather. Since the edema made its appearance, however, the nasal hemorrhages have been more frequent. He has had at times several in the course of a week and, exceptionally, as many as four or five in one day. Occasionally, the bleeding has awakened him at night by giving rise to a tickling sensation in the throat. (It should be stated here that the history of persistent epistaxis was elicited at a time when the experimental work upon this man was far advanced. There never was any evidence of it at the bedside, and as the man had no nurse, and made no complaint of it, the symptom long was unsuspected. The actual loss of blood from this source probably was insignificant, or the condition certainly must have awakened suspicion during his stay in various hospital wards.)

The patient was first seen March 20th, 1911. At that time he was confined to his bed and presented the characteristic picture of chronic parenchymatous nephritis.

Physical examination: He is a man of medium height, broad-shouldered and well-formed, but considerably emaciated. The spinous processes of the vertebrae are very much in evidence and his ribs show plainly. Contrariwise, the face looks quite full, and the lower extremities are swollen and edematous. The skin everywhere has an unhealthy, muddy appearance, which is greatly accentuated by personal uncleanliness and the presence of acne vulgaris. The skin is puffy under the eyes.

All his special senses are normal, and there are no central or peripheral symptoms referable to the cranial nerves. The eye grounds are entirely negative. Behind the left ear is an old trephine opening at the site of the mastoid antrum. There is no discharge from it or the middle ear. The mouth and throat are negative: he has good teeth, the palate is well arched, and the tonsils are not enlarged.

The lungs are normal. The heart is normal in size and position. There is no arrythmia, and the apex impulse is not exaggerated. All the valve sounds are clear. The second aortic sound is perhaps slightly accentuated. The radial pulse rate is eighty, and the vessel wall is soft and easily compressible. The liver and spleen are not enlarged.

There is massive edema of the lower extremities. Sensation everywhere is intact, and the reflexes are normal. The temperature is normal. The blood contains 80% of hemoglobin.

Urine: Specific gravity, 1.014; albumen, 6 parts per mille; no sugar. The sediment contains numerour coarsely granular casts, epithelia cells, etc., and is characteristic of chronic parenchymatous nephritis. The daily volume was about 2500 cubic centimeters.

CHARACTERISTICS OF THE MILKY SERUM

The fresh blood of this individual was not in any way remarkable. It appeared, in fact, to be entirely normal. On standing, however, in a very short time white, milky serum began to separate, and, generally speaking, in the course of an hour it had accumulated in such abundance that nothing whatever could be seen of the clot, and the vessel appeared to contain pure milk. The fresh serum was slightly alkaline in reaction. It showed no tendency to separate into layers on standing, and after several weeks in vitro remained homeogeneous in appearance and uniformly white. It was not affected in the least by ordinary filtration. And it passed without change through a Berkfeld filter. When diluted in the proportion of one to one hundred with distilled water, it formed a strongly opalescent solution. This mixture was remarkably stable. Weak mineral acids and alkalies had no demonstrable effect upon it and various neutral salts brought about no change that could be detected. All attempts to clarify it by means of organic fat solvents, failed utterly. When, on the contrary, the serum, diluted with fifteen parts of water was gently mixed with chloroform, so far from rendering the solution clear this solvent invariably had the reverse effect and augmented the cloudiness. By treating the milky serum as Boggs and Norris suggested, (Jour. Exp. Med., 11, 553, 1909), with an excess of ammonium oxalate crystals, and allowing it to stand 12 hours, ether, previously tried without success, rendered the serum quite clear, but it was invariably noted, also, that after a few hours the serum emitted an intense ammoniacal odor, exactly as would have occurred in an ordinary double decomposition in the presence of a stronger inorganic base.

The diluted serum could always be clarified by filtering out the carbon dioxide globulin group.

METHODS AND TECHNIC.

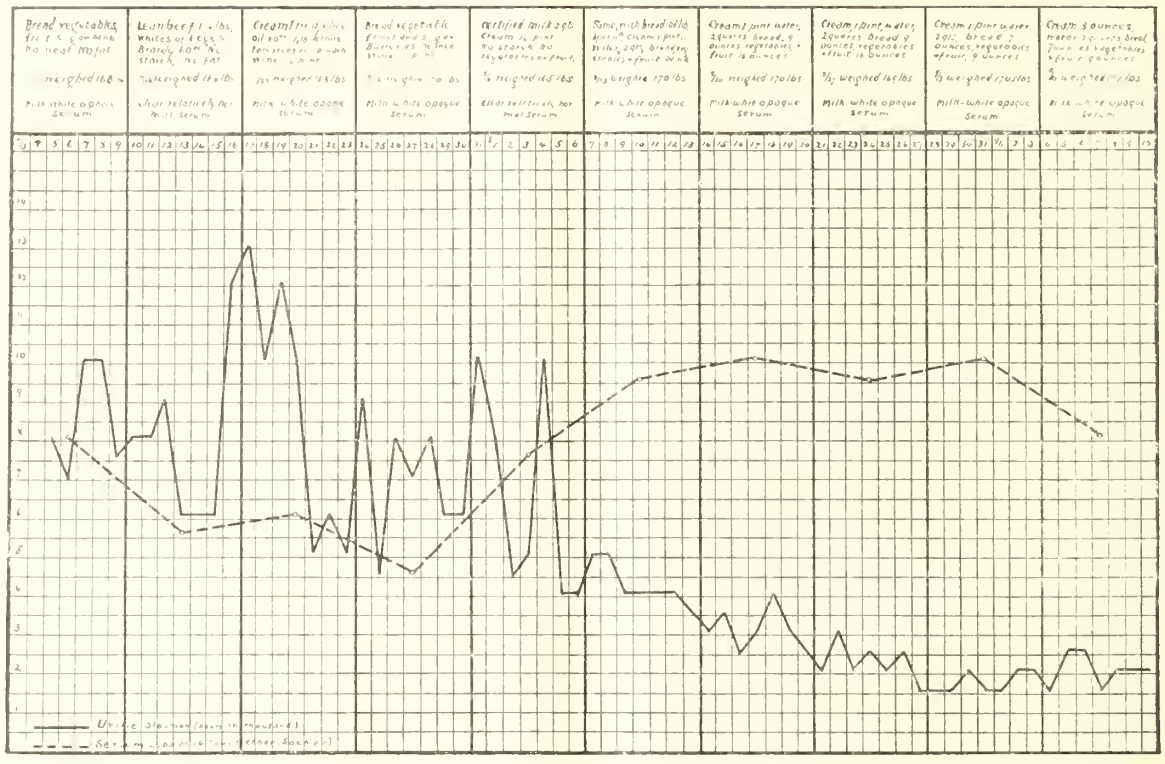
From ten to forty cubic centimeters of blood were taken, as needed, in the usual manner, once or twice a week. The serum was measured with a capillary pipette divided into tenths.

In all direct extractions, one cubic centimeter of serum was used. It is perhaps as well to state that by a direct extraction is meant one in which the serum is dropped into an excess of the solvent Naturally, ether and chloroform cannot be employed for this purpose.

In regular Soxhlet extractions with ether alone, and in serial extractions with the four principal lipoid solvents, ether, chloroform, acetone and absolute alcohol, two cubic centimeters of serum were used.

On the continent, according to the most recent reports, it is the custom to dry the serum on strips of filter paper before proceeding to extract it in the usual way. It is, however, a very debatable question whether, as Friedemann and Herzfeld appear to believe, (Berl. klin. Woch., No. 47, 1911), the dry film of protein can be penetrated by the solvents and completely extracted in so short a time as half an hour. A more satisfactory plan than this is to incorporate the fresh serum with calcined kieselguhr, which holds the watery part of the serum firmly but does not oppose any resistance to the free passage of the solvent whilst, besides, it affords a very large contact surface to the reagent.

The figures upon which the lipoid curve in table 1 is based were obtained by ether extraction of the dry kieselguhr-serum mixture, continued for six hours. In a series of studies at present under way, however, the ether method has given place to one which yields the total lipoid value. A description of this method for the determination of the total lipoids appeared in an earlier issue of this Journal.



A point to be emphasized is that by ether alone it is not possible to remove all lipoids. Indeed, no one solvent will accomplish this.

The cholesterin ester was saponified with alcoholic soda at 100° Centigrade. The free cholesterin was taken up with chloroform which was then dehydrated with strong sulphuric acid. For a successful result, of course, the dehydration must be thorough.

EXPERIMENTAL OBSERVATIONS CONCERNING THE RELATION OF THE LIPEMIA TO THE FOOD-FAT, ETC.

The various test diets given during a period of ten weeks, and the corresponding peculiarities of the urine-albumen and serum-lipoid curves, are graphically shown in Table 1.

Speaking in a general way of the entire period, it may be said that in proportion as protein substances were excluded from the diet, the albuminuria steadily decreased. But, curiously enough, to insure the physical comfort of the patient, and to keep his weight constant, it was found to be necessary at the same time to maintain a high grade of lipemia. This end was finally attained by a carefully adjusted regimen of cream and carbohydrates.

It will be noted that the highest lipoid value recorded in the curve was a little over 2%. This, however, since it is the ether value alone, does not represent the total lipoid value at that point. The true value there was nearly 3.20%.

Another interesting fact observed was that a progressive reduction of the specific gravity took place without a corresponding increase of the urine volume. In ten weeks the density decreased from 1.014 to 1.006, but the volume ranged only between 2000 and 2500 cubic centimeters.

The urine was tested for sugar daily with dilute Fehling's solution, and with Nylander's reagent. And once a week a fermentation test was made with controls. A positive fermentation test was twice noted, once in the first, and again towards the end of the second week. At other times the tests were negative. The amount of sugar present was, however, very small, and would ordinarily be reported as a trace.

One of the most significant facts brought out in the course of this work, and the one upon which it is desired to lay especial emphasis, was that the lipemia could be abolished by diet control.

This singular fact was first observed whilst the patient was limited to a strictly protein diet. During that week the serum was almost clear and only a trace of cloudiness remained. At the same time, however, the man lost weight rapidly, the skin assumed a muddy appearance, and he was moody and despondent. Moreover, at the end of this week, as it was natural to expect, there was an enormous increase in the albuminuria. The disturbance caused by this diet lasted over to the middle of the following, third week, when his subjective condition greatly improved and the albumen output diminished notably.

The serum again became clear in the fifth week. This time, strange to say, when the diet consisted only of milk and cream. During this week he consumed each day two quarts of certified milk and one pint of cream. In addition to this, no other food whatever was taken. On this diet, within two days the serum ceased to be milky, and appeared in every respect as it had during the all-protein period. Moreover, again, as in that period, he lost weight rapidly, and the same subjective and objective status re-appeared. At the close of

the milk and cream week, the evidence then pointing clearly to the fact that in order to utilize fat it was necessary for starch to be present, the diet was modified by the addition of a liberal allowance of bread. In a few hours after this starchy food was ingested the serum again became perfectly white. At the same time the change in his general condition was striking. Color returned to his skin and he became cheerful. The weight lost during the milk and cream week was promptly regained when he resumed a diet in which fat and starch predominated. From these experiences it was obvious that in this individual a massive cleavage of fat could not occur in the absence of a starch element, but, unfortunately, the phenomenon had not been studied by weight.

After the ten weeks period was over, therefore, in order to be sure that the foregoing observation was valid, the experiment was repeated, this time with definite lipoid determinations. Exactly the same phenomenon was noted. The details of the experiment are as follows:

Sept. 21st, at noon, before eating, and five hours after the morning meal, the blood was taken. The total lipoid value of this serum was 3.25%. The serum was as white as milk. Sept. 23rd, blood was taken at the same hour. The conditions were the same as before. In the interval, the daily diet had consisted of two quarts of milk, and one pint of cream. The total lipoid value of this specimen was 1.35%. The serum was practically clear and showed only a slight cloudiness. This was at noon. With the mid-day portion of milk and cream which he was then ready to eat, he was allowed all the bread he desired. At two o'clock, 2 hours after eating, the second specimen of blood was taken. Even in this short time, however, the lipoid value had risen to 2.20%. The serum was perfectly white and offered a most extraordinary contrast to the earlier specimen.

The subsequent history of this patient was interesting. Although his general condition was much improved by the dietary restriction, and he had gained in weight, the attacks of nose-bleed continued to annoy him. In order if possible to discover the causative lesion, therefore, a thorough exploration of the nasal cavity was made by Dr. Henry Horn. What was at first supposed to be an idiopathic ulcer of the septum was encountered. It was evidently of long-standing. The tissues about it bled freely when disturbed, and the hemorrhage was rather difficult to control. Somewhat later an accumulation of foul pus was discovered in the antrum of Highmore on the right side and the cavity was drained by a radical operation. As a result of this treatment, the epistaxis ceased directly, and within ten days the blood-serum became practically clear. At the present time, two months after the operation, the serum remains clear, and when blood is taken after a full meal it is not at all milky. The total lipoid value now is slightly less than 1.40%, an enormous reduction when it is considered that at one time the serum contained nearly four per cent. of fatty bodies.

The patient now weighs one hundred and eighty pounds, and continues to take a diet which largely consists of cream, green vegetables and fruit. The albuminuria persists.

The etiology of the peculiar lipemia here described is obscure. About the only conclusion so far tenable, and that a very general one, is, that the experimental data indicate a profound disturbance of a lipolytic mechanism. Perhaps the most conspicuous feature emphasized in the descriptive curves is the protectory action of the lipoids upon the protein substances of the body. Upon this point the evidence was clear and unmistakable. Whenever by dietary restrictions the lipemia was suppressed, the albuminuria was greatly augmented and an immediate loss of weight took place. Conversely, with an increasing lipemia the loss of albumen was noticeably reduced.

By excessive and repeated blood-letting, Boggs and Norris (loc. cit.) were able to produce a very remarkable lipemia in rabbits. There can be no doubt that the white serum so obtained, in many ways was analogous to the serum of this patient. However, the profound secondary anemia induced in the animal as a provocative lesion, did not enter as a noteworthy factor in the human subject, and there was in the latter, moreover, an obvious relation between the lipemic status and the sinus empyema. But here again the evidence leads one astray, for in other patients with sinus empyema, investigated by Dr. Horn, no visible lipemia was detected, and the blood appeared to be normal. A man with a very high grade of lipemia, now being studied, has parenchymatous nephritis, but he is not anemic, nor is there any evidence of sinus disease. Hence it would appear that a disturbance of the lipolytic system, such as that here dealt with, is highly individual and depends upon a pathological substratum at present unknown.

The general conclusion towards which the experimental data here stated appear to trend is that an intravascular lipoid current exists and that it is recruited from the food-fats through the agency of a carbohydrate derivative. In view of the fact that cholesterin esters were present in excess, the lipemia, after the Chauffard school, could be defined as expressive of a true hypercholesterinemia.

IMPORTANT NOTICE!

If you are threatened with a suit for alleged malpractice, communicate at once with the Secretary; many threatened suits are thus averted.

If you are sued notify the Secretary immediately.

DR. PHILIP MILLS JONES,
Secretary,
Butler Building, San Francisco, Cal.

REPORT OF A CASE OF SINUS THROMBUS DUE TO WELCH GAS BACILLUS.*

By E. D. SHORTLIDGE, M. D., San Francisco.

F. D., male, age 29, single, plumber by occupation, born in France, was admitted to the medical service of the French Hospital November 20th with the following history: Has been in the United States about four years and has enjoyed good health during that time. Present illness dates from Sunday evening, the 19th, when he went to a French restaurant and partook heartily of a French dinner. About 10:30, soon after reaching his lodgings, complained of nausea, dizziness and some abdominal pain, followed by vomiting and purging, which continued during the night. In the morning, his symptoms continuing, he remained in bed. His employer, finding that he did not return to work, went to his room and, finding him in bed, had him sent to the hospital, believing his illness was due to ptomain poisoning. His temperature on admission was 98.4°; was put to bed and ordered broken doses of calomel followed by a saline purge. The following morning on making rounds the resident physician found his general condition much improved, but on looking on his pillow noticed it stained with pus which was also flowing from the external auditory meatus. He advised him to go to the clinic and see me.

He was first seen by me at 9 a. m., November 21st; not being able to understand much English, it was necessary to converse through an interpreter. At this time his nausea and vertigo had disappeared and, with the exception of being a little weak, he said he felt well. Between six and seven years ago, while serving in the sanitary corps of the French army, he had an attack of erysipelas. As a sequel he had an attack of acute otitis media in his right ear followed by profuse discharge, which continued for four or five weeks, gradually lessening in amount but never quite ceasing. Says he was treated by French surgeons until coming to this country; since then has not seen a surgeon but has treated the ear himself by washing and then drying it. Has never given him any trouble or caused him to lose any work, but says the present discharge is more profuse than ever before. He appears to be a well-nourished man of about 30 years and looks in good health. There is no spontaneous nystagmus. Examination of right ear shows slight edema over mastoid region with tenderness extending to tip. The external meatus filled with pus, profuse and a very foul odor. The canal at the juncture of the cartilagenous and bony portion is so small from the long-continued discharge that it is almost impossible to introduce the smallest speculae. On account of the tympanic cavity being filled with granulations it was difficult to distinguish any landmarks. Temperature 99°, pulse 80.

The following tests were made: Weber to diseased ear. Caloric reaction with cold water positive. A diagnosis of an acute exacerbation of a chronic otitis media, probably an infected cholesteatomata was made. The nature of the disease and its danger were explained to him and an immediate operation advised. He was unable to understand why an operation on an ear that had not troubled him since he had the discharge was so imperative, but said he would talk it over with his friends. During the day he decided to be operated on and the time was fixed for the following morning at 10 o'clock. The patient was etherized and the usual mastoid incision was made. On removing the cortical layer of the mastoid, foul and offensive pus under pressure and filled with gas, exuded. The mastoid cells were excenterated and the tip removed. After removing the tip, a small Bezold's abscess was uncovered, filled with gas. The tympanic cavity and attic were filled with cholesteatomata, which was carefully removed with a curette. In going over the mastoid cavity again with a searcher, a small space over the sinus was discovered. In following this up a perisinous abscess and a dark area somewhat smaller than a ten-cent piece on the sinus with a small granulation was discovered. The sinus was uncovered for about 1¼ inches until the vein looked healthy. The question whether to puncture, incise or open freely and pack each end arose, but as the vessel seemed soft and compressible with blood flowing through, it was decided that by relieving the pressure in removing the pus and the bony covering, a thrombus would be prevented. The cavity was packed lightly with sterile gauze saturated with a 25% solution of argyrol and the patient put to bed in good condition. At 8 p. m. his temperature was 100° F., pulse 90. He spent a somewhat restless night, sleeping little, but no pain. At 6 a. m., had temperature 101° F., but at 8 it had dropped to 100.2°, pulse 86, no pain, jugular soft and compressible. About 4:30 p. m., the resident phoned me that the patient had had a chill and his temperature was 104.6°, pulse 120. Realizing that a thrombus had formed, gave orders to prepare for ligating the jugular and lateral sinus. About 5:30 the patient was again etherized. The jugular vein was found to be thrombosed to about the facial vein and was resected from just about the clavicle to the jugular bulb. The lateral sinus was filled with a thrombus from the bulb to the knee, where fluid blood was found. In dissecting in the upper part of the neck the tissues were found infiltrated with gas. The wound in the neck was closed except for a small place for drainage and the mastoid wound packed with gauze and argyrol solution. On account of a rapid and thready pulse he was given 250 cc. normal salt solution in the vein and put to bed in fair condition. His condition not improving, he was given stimulants by rectum and by hypo. Another 250 cc. normal salt with 3 cc. of a mixed infection vaccine was given in the vein. About 3 a. m. his condition became worse and about 3:30 he died perfectly conscious.

A culture taken at the time of the first operation showed a large non motile bacillus resembling the Anthrax Bacillus, in pairs, ends rounded and encapsulated with characteristic gas production of the Bacillus Aereogenous Capsulatus.

To my mind the great lesson this case teaches is how serious a so-called simple discharge from the ear may become without any apparent cause and how an early and adequate operation will save a patient from such grave consequences.

* Read before the Eye, Ear, Nose and Throat Section of the San Francisco County Medical Society, January 23, 1912.

RESULTS OBTAINED WITH A MODIFIED VACCINE.

(A Report of Ninety Cases.)

By LOUIS D. GREEN, M. D., San Francisco.

The publicity given to Schafer by the lay press has a tendency to cause medical men to regard with suspicion all claims for the value of the vaccine therapy as advanced by him. This is to be expected, as some of the claims made greatly exaggerate its therapeutic powers. It is to be regretted that such is the case, as the vaccine probably has a distinct value in the field of medicine. By some who have had little or no experience with that particular form of vaccine therapy, it has been denounced as valueless; by others lauded to the skies as a panacea for nearly every ailment that man may be heir to. In both instances there seems

to be a lack of knowledge and experience, as well as a misunderstanding as to the manner of its action.

At present the vaccine is issued by a large pharmaceutical house for experimental purposes only, but in view of the fact that many clinicians are using it and that some very serious results have followed its administration, a word of caution in regard to its use seems opportune.

It is not a vaccine as ordinarily understood, as it contains no bacterial bodies, but is a bacterial filtrate with the albumin precipitated.

The principle underlying the treatment is based upon the assumption that a multiplicity of infections occur in the various diseases and that a vaccine, in order to be most efficacious, should contain the products of the secondary invading organisms, as well as that of the specific bacterium causing the disease.

As the majority of infections are due to the common pathogenic organisms, the vaccine which Schafer calls the mixed infection vaccine contains approximately an equal proportion of the products of the ordinary pathogenic organisms, viz: various strains of staphylococcus pyogenes, streptococcus pyogenes, pneumococcus, bacillus coli communis, bacillus typhosus, bacillus pyocyaneus, etc.

The specific vaccines, i. e., those given in specific diseases as typhoid, gonorrhea, pneumonia, etc., contain a predominance, approximately 50 per cent., of the products of the specific organism causing that particular disease.

The autogenous vaccines are prepared the same as the stock vaccines, except that cultures are made from the bacteria causing the infection instead of from stock cultures.

In the past year the writer has treated ninety cases by the above method. These are given in the accompanying table; the number of treatments per patient varying from one to forty, or more.

The vaccine used was principally the stock vaccine, but in many cases autogenous vaccines were prepared according to Schafer's method. These were used in various combinations, concentrated and dilute, and were given subcutaneously as well as intravenously.

Reaction Following Intravenous Injection.

This usually commenced about thirty minutes after the injection and lasted from fifteen to forty-five minutes, the average being twenty minutes. It consisted of a feeling of chilliness followed by a severe rigor, rapid pulse, marked rise in temperature, difficult respiration and flushed face sometimes passing to cyanosis, and was often accompanied by nausea and vomiting, diarrhea, pain in the lumbar region, pain at the seat of disease, severe headache and a peculiar taste. Within two to three hours after the chill the patient would break out into a profuse perspiration, but afterwards usually felt much better than before receiving the vaccine. While the majority of patients complained of feeling very cold, the rigor was in some cases accompanied only by a feeling of chilliness along the spine. In other cases, even though the chilliness was absent, the patient was unable to control the shaking. Often the rigor was so severe that it was difficult to obtain the radial pulse. The temperature rose to the highest point in about two hours, sometimes reaching 105° or 106°. In from four to six hours later it would drop to normal or subnormal. The cyanosis was sometimes so severe that, with the difficult respiration and weak pulse, it gave one the impression of the patient being in extreme collapse and in imminent danger of dissolution.

A peculiarity of its seemingly selective action was increased pain at the seat of disease during the height of the reaction. For example, in rheumatic or tubercular joints the affected parts became more painful, but this would entirely disappear after the reaction had subsided. It usually reappeared again in eight to ten hours, but with less intensity. After each injection it became less, until it finally disappeared. The nausea and vomiting passed away in a few hours, and the patient was able to resume the diet he was on previous to the injection. The diarrhea seemed to come on at the height of reaction, and it was often difficult for the patient to control his bowels.

After the reaction had subsided the appetite increased. The relief following the reaction was particularly noticeable in cases of pneumonia with extensive lung involvment, where before injection breathing was rapid and painful, after the chill had subsided the breathing became slower and less painful and the general condition of the patient was very much better.

The loss of weight which often accompanies the severe reactions is sometimes so great as to make it a factor of considerable importance in subsequent injections. This is particularly important in tubercular cases where after a severe reaction the patient will often lose from four to six pounds within three days.

At present the writer endeavors to obtain a reaction less severe in intensity, although a slight rigor or chill is the effect aimed at. The severe reactions heretofore obtained caused too great a depression, and while the benefit derived was often very pronounced, the danger connected with it was correspondingly greater. Similar results can be obtained with a less severe reaction and this danger almost entirely eliminated.

Reaction Following Subcutaneous Injection.

We have almost entirely discontinued the administration of the vaccine subcutaneously, using it in that manner mostly in cases where it is difficult to enter a vein. Experience has taught us that in order to get the quickest and best results, the intravenous method is the one of choice.

When given subcutaneously the reaction came on three to four hours later with loss of appetite, headache and a feeling of general malaise. In some cases three or four chills occurred during the twenty-four hours. There was a marked inflammatory reaction at the site of injection, which became very painful. This reaction in many cases lasted for several days.

Those patients who had the vaccine administered

in both ways invariably preferred to have it given intravenously, as then, where the vaccine was properly prepared and the proper dose given, although the chill may have been more severe, the reaction was over in a few hours and the patient felt much better after it. The cases we have treated have amply demonstrated to us the superiority of the intravenous over the subcutaneous method.

In the ordinary manner of vaccine treatment it has been the custom to stop short of any marked reaction, but the method according to Schafer goes far beyond this point. Schafer claimed that the vaccine was harmless and that the clinical symptoms could be ignored, but this is absolutely contrary to the writer's experience, and though he regards it as a very valuable therapeutic agent, he has found it to be a very dangerous one if used carelessly or unintelligently. While a certain dose can be given to some patients with safety, with a marked and rapid improvement in their condition, in other cases the same size dose may cause a fatal termination.

The psychic effect which the severe reactions produce is undoubtedly the cause, in many cases, of the apparent improvement. It is hardly possible that the vaccine should have any curative effect on a disease not due to infection. In some, where there was seemingly an improvement at first, the condition returned as soon as the psychic element wore off.

A number of cases where a fatal prognosis had been made were given the vaccine as a last resort. The greater number died, but a few of them recovered and did so apparently only as a direct result of the vaccine. While in terminal cases great results are not to be expected, the patient should be given the benefit of the doubt and the vaccine administered, but in small doses. In this way it has been possible to bring to complete recovery cases that were considered hopeless.

The following table shows the diseases treated and the results obtained. Some of these patients are still under treatment, but the result in each is well enough indicated to make it possible to draw conclusions therefrom:

CASES TREATED.	No.	Recovered.	Greatly Improved.	Slightly Improved.	No Benefit.	Died.
Cellulitis of face	1	1	....	....	....	....
Otitis media	2	1	....	....	1	....
Carbuncle of neck	1	....	....	....	....	1
Acute articular rheumatism	3	2	1	....	....	....
Chronic articular rheumatism	3	2	....	....	1	....
Arthritis deformans	2	....	....	....	2	....
Typhoid fever	4	2	....	....	1	1
Pneumonia	14	12	1	....	....	1
Empyema	3	2	....	....	....	1
Erysipelas	7	5	....	....	....	2
Meningitis	1	....	....	....	....	1
Pulmonary tuberculosis	9	....	4	1	4	....
Tubercular arthritis	3	1	1	1	....	....
Tubercular adenitis	1	1	....	....	....	....
Cervical adenitis	2	....	1	1	....	....
Tubercular synovitis	1	....	1	....	....	....
Bronchial asthma	4	2	....	....	2	....
Osteomyelitis	2	2	....	....	....	....
Fistula in ano	1	1	....	....	....	....
Gonorrheal epididymitis	1	1	....	....	....	....
Sciatica	2	....	....	1	1	....
Corneal ulcer and hypopion	1	....	....	....	....	1
Duodenal ulcer	1	....	....	1	....	....
Peritonitis	1	1	....	....	....	....
Tubercular peritonitis	1	....	....	1	....	....
Chronic rhinitis	2	....	1	....	1	....
Pan-sinusitis	1	....	1	....	....	....
Pyemia	1	....	....	....	....	1
Septicemia	2	2	....	....	....	....
Sarcoma of liver	1	....	....	....	....	1
Infected wounds	12	6	3	1	1	1
Total	90	44	14	7	14	11

Cases Recovered.

Forty-four were entirely cured of the condition for which they were treated. These included four cases that were given the vaccine as a last resort, their condition before the vaccine was administered indicating that in all probability they would have died.

While with the exception of these four cases, the majority undoubtedly would have recovered with the ordinary methods of treatment, the rapidity with which the results were obtained was so much greater than would ordinarily be expected that we have to credit the vaccine with the benefit derived.

In the cases of acute articular rheumatism, the pain in the affected joints disappeared soon after the reaction, to reappear within six to eight hours, but with less intensity. It became less after each injection, until it finally disappeared entirely. The convalescence was shorter than usual. No internal medication was given.

In the cases of typhoid fever both were delirious before the administration of the vaccine. Eight hours after the first injection they were rational and remained so until discharged. The disease ran a mild course, though of about the usual duration.

In the cases of pneumonia, while in the majority convalescence was apparently not shortened, the general condition of the patient at the height of the disease was very much improved by its use. In one of these cases, with beginning consolidation, one injection seemed to abort the condition. No more vaccine was given, as the patient refused further treatment. Recovery was rapid.

In the cases of erysipelas the course was milder and shorter than usual. One case had a relapse after the vaccine was discontinued, but this rapidly cleared up with four more injections.

In the two cases of bronchial asthma, a cure seemed to be effected. From last reports no return of the condition has occured.

In the case of epididymitis, with a complicating orchitis as a result of gonorrheal urethritis, three injections effected a cure.

The infected wounds healed much more rapidly than in cases where the vaccine was not used. The usual surgical treatment was followed in conjunction with the vaccine.

Greatly Improved.

Fourteen cases were greatly improved with a number of these still under treatment. In some we were unable to go beyond a certain point in their improvement, and although this was quite marked, no advance could be made beyond this point.

In the case of acute articular rheumatism, although the pain and swelling in the affected joints were greatly reduced after each injection and the patient finally discharged cured, the convalescence was not shortened.

The case of pneumonia developed an empyema which had to be drained. The vaccine was continued and with the aid of forced expirations this cleared up much sooner than would ordinarily be expected, the lung expanding to almost the normal size when the patient was discharged.

In the cases of pulmonary tuberculosis, the most noticeable thing was the relief of the cough. After the first two injections it was greatly lessened in severity and frequency. The temperature became normal and remained so. The appetite improved and the general condition was much better than before the vaccine was given.

Slight Improvement.

These seven cases showed slight though definite improvement as a result of the vaccine.

No Benefit.

In the fourteen cases the results obtained were very disappointing. The conditions in many of these were similar to those cases greatly benefited or cured, and the treatment was carried on in the same manner, but no benefit whatever was derived from its use.

The cases of arthritis deformans seemed to be slightly improved at first, but the treatment was discontinued after giving it a fair trial, as no permanent benefit was derived.

The case of typhoid fever was given the newly prepared stock vaccine. On account of the severity of the reactions and great depression which followed its use, the dose was reduced to .065 c.c. and was finally discontinued after a fair trial, and although the patient recovered, no benefit was obtained that could not have been attributed to the usual methods of treatment followed in such cases.

In the cases of bronchial asthma the results were negative. In fact, in one of these the patient seemed to be worse after each injection. The vaccine was discontinued after a fair trial.

The case of chronic rhinitis received an autogenous as well as the stock vaccine with no benefit.

In the case of infected wound resulting from a compound fracture the treatment was discontinued as no benefit from the vaccine occurred, although the patient was finally discharged cured.

Patients That Died.

In one of these eleven cases a tentative diagnosis of septic endocarditis was made, as the symptoms pointed towards that disease and the vaccine was administered for that reason. Autopsy proved it to be sarcoma of the liver and intestines. The patient died about one week after the last dose of vaccine was given.

Another, with corneal ulcer and hypopion, gave symptoms of secondary brain involvement and was given the vaccine accordingly. Autopsy proved death to be due to uremia resulting from a chronic interstitial nephritis complicated with chronic valvular disease.

Others of these cases came under treatment too late, as in the case of typhoid fever, where the patient was in extremis when seen by the writer and the treatment was given without any expectation of benefit being derived.

After carefully watching these cases, we feel convinced that in some instances the immediate cause of death was the vaccine. In these cases the symptoms indicated the introduction into the circulation of a powerful poison, the fatal termination following in from one and a half to three hours after its injection, accompanied by an exaggeration of some of the symptoms of the reaction. These were desperate cases and in all probability would have died, but in view of the fact that a number of equally desperate cases where a fatal prognosis had been made, were saved by the administration of the vaccine, it is important that it be given, but in such doses that the severe reactions are avoided.

In the cases where the vaccine apparently played no part in the fatal issue, death did not follow till from one to six days after the last injection was given. There was an absence of the symptoms of reaction in the period intervening between the last dose and the time of death.

Schafer in *The Therapeutic Gazette,* April, 1911, says that from five to fifteen c.c. of the vaccine can be given intravenously, with 10 c.c. as the initial dose in ordinary cases. As an example of the danger of using the vaccine in such large doses, an elderly patient received 6 c.c. of pneumonia vaccine and died within an hour and a half after its injection with symptoms of a severe toxemia coming on soon after the vaccine was given; although another patient, a young robust adult with an extensive lobar pneumonia, was given 7.5 c.c. of the same vaccine with marked improvement in his condition and final recovery.

Hints on Treatment.

As the different vaccines show a difference in strength (tubercular vaccine causing a reaction much more severe than the others) and as different patients react differently to the same vaccine, it is important that the physician carefully note the reaction resulting from the first injection, the better to enable him to judge the size of the succeeding doses if it is to be continued. If this is not done, serious results may follow its use, as one of the most important points in judging the size of the dose is the symptoms that arise during the reaction.

The desired reaction is obtained when there exists a rather mild chill with little or no difficulty in breathing. The presence of cyanosis, while usually harmless, is not desirable, as it shows too great depression. Although the rise in temperature may at times be so high as to be alarming to the inexperienced, it accompanies nearly all the favorable cases. The perspiration is desirable, as it helps to eliminate the toxins and relieve the kidneys of much of their work. Following this there should be a marked improvement in the patient's condition.

After each successive injection the reaction usually becomes milder and the size of the dose has to be correspondingly increased.

In the feeble and aged, as well as in the young, the size of the dose should be reduced accordingly.

In very exhausting diseases or in desperate cases

the initial dose should be very small and increased as tolerance is established.

In treating with the vaccine one must not abandon all other forms of treatment, as any method that will aid the body in fighting the disease is desirable.

It has been found that the following procedure proved the most efficacious:

The patient should abstain from food for about three hours previous to the injection, as the reaction may cause vomiting. He should be in bed in a recumbent position. The veins at the elbow are usually chosen, the skin having been previously sterilized.

The vaccine should be injected slowly and it is important that none of it enters the tissue surrounding the vein as it causes a very painful local inflammatory reaction which persists for several days.

The patient should remain in bed for two or three hours after the chill has subsided, as collapse is apt to follow on getting up too soon.

In the aged, or where the patient is weak or his condition bad, stimulate at the time of injection. It has been the writer's custom to use 1/30 gr. of strychnine hypodermically as a routine in such cases. Other stimulants can be given as required.

For the headache, pain in the lumbar region or at the seat of disease when very severe, morphine may be necessary. On account of the profuse perspiration, cool normal saline solution per rectum by the drop method has been found very beneficial, particularly in typhoid cases.

Doses.

As at present prepared, the vaccines cause a much more powerful reaction than that which Schafer originally prepared, and the writer's usual procedure in the average case is to give as the initial dose 0.5 c.c. diluted with 2 or 3 c.c. of sterile distilled water.

Where the patient is very feeble, or where the disease has progressed so far as to make the reaction in itself a menace, we have sometimes reduced the dose to .033 c.c. with good results.

While 0.5 c.c. is the average initial dose with most of the vaccines, with the tubercular even this dose is too large. This vaccine produces a more severe reaction than the others, and for this reason the average initial dose used by the writer has been .065 c.c. diluted with sterile distilled water.

The above doses should be rapidly increased as tolerance is established. In the case of tubercular vaccine, .065 c.c. at a time; with the others, .065 to 0.5 c.c. This will depend largely upon the severity of the reaction that follows. Where this is mild and where the tolerance of the patient is rapidly obtained, the dose should be correspondingly larger, remembering not to give a dose too large to be within the bounds of safety.

It should be administered daily for the first six or seven days, then every other day for about one week, then twice and finally once a week. This will depend largely on the disease treated, as well as on the rapidity with which convalescence takes place. It is important not to stop the injections too soon as a relapse may occur if this be done.

In pneumonia it has been found advisable to give the first three injections at twelve hour intervals, or at about the time the temperature begins to rise again. After this, daily injections for about four days was usually all that was necessary.

It is very important that the injection should not be repeated until the symptoms of the previous reaction have subsided. This is particularly true of cases with pulmonary tuberculosis, as the loss of appetite and weight and feeling of general malaise that occur in many of these cases as a result of the reaction is greater and persists for a longer period than in the other conditions, sometimes lasting three days. In these cases we have found it best not to give the vaccine oftener than every other day, and in some cases once or twice a week is often enough. The dietetic, climatic, hygienic and any other form of treatment that may aid the patient in fighting the disease should be followed.

In infected cases where pus is present it is necessary that ample drainage be maintained and the ordinary surgical treatment in regard to asepsis be followed.

In typhoid or other cases that persist for any length of time it is advisable on account of the profuse perspiration to give normal saline solution per rectum by the drop method. They usually absorb large quantities of this. It will be found that cold baths are not necessary to reduce the temperature.

Where possible and the urgency of the case will allow, an autogenous vaccine should be given as it generally acts more efficaciously.

Conclusion.

In conclusion, we wish to emphasize the following points:

The dose should be small enough to give a mild chill. Severe reactions are to be avoided.

Tubercular vaccine should be given in smaller doses than the others.

Give the vaccine intravenously if possible.

Watch the reaction so as to know the proper procedure to follow.

Stimulate at the time of injection, if the patient's condition requires it.

Do not repeat the injection until the symptoms of the previous reaction have subsided.

Other recognized methods of treatment are not to be discarded.

In all surgical cases ample drainage must be maintained.

If possible autogenous vaccines should be used.

IMPORTANT POINTS IN THE EARLY RECOGNITION AND DIFFERENTIATION OF SOME DISEASES OF THE NERVOUS SYSTEM.*

By H. C. McCLENAHAN, M. D., San Francisco.

Many of the errors made in the early diagnosis of several important diseased conditions of the nervous system are avoidable and generally result from

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overlooking, disregarding or not properly valuing certain symptoms, or refusing the assistance derived from simple laboratory procedures.

Such errors frequently entail unnecessary suffering and anxiety to patient and embarrassment or even humiliation to physician. Hence, every effort at emphasis, either by recounting, regrouping, additions or otherwise, by which a reduction is made in the occurrence of such errors is justified. No disease is discovered, symptom analyzed, or method described in this paper; in fact, all that I expect to say has been said on innumerable occasions before, nevertheless errors occur with sufficient frequency to justify a representation, in so far as my experience goes, of some of these "sins of omission rather than sins of commission."

The diagnosis of disease is often attended with difficulty, when the most careful and painstaking methods are used in their investigation, by the most capable and conscientious physicians, that it really seems a misfortune when the diagnosis "stares us in the face" and is not recognized.

The great Osler says that "most mistakes made in diagnosis are due to lack of sufficient examination." This is, no doubt, responsible for the majority, especially if in "sufficient examination" is included interpretation and valuation of symptoms. A feature of misdiagnosis, or rather lack of diagnosis, which has frequently impressed me, results from the disregarding of objective symptoms, through optimistic tendencies, acquired from habit in our relation to the management and treatment of cases. Optimism in diagnosis is as objectionable as pessimism is undesirable in the treatment of disease. Optimism and ignorance are dangerous to medical science; pessimism and knowledge retard its progress, while optimism and knowledge are its greatest beneficiaries. He who combines pessimism in diagnosis, with optimism in treatment, is the ideal physician, the reverse of which is not true. Most physicians can become good diagnosticians if they will persist in, and insist upon, sufficient examination of all cases. Especially important is the cultivation of the habit of grouping, interpreting and valuing symptoms.

The time factor in examination is, of course, an important item; consequently the desirability of any method or means by which we can "place our finger on the diagnosis," as it were. Do not understand me to oppose systematic examination, but to recommend to the busy physician a "thorough systematic examination of every organ in the body" as most of the works on diagnosis insist upon, is unnecessary and unavailing in many cases. A "thorough systematic examination of every organ in the body" requires more time, equipment, and more knowledge than most of us possess, and is more expensive than the majority of patients could or would pay. Aside from the matter of time and expense, admitting that they are both important factors, in many instances neither are necessary if the proper interpretation and valuation is placed upon symptoms presented.

We know that many symptoms are apparently common to several diseases, but upon proper and sufficient analysis, we are generally able to find something that will put us on the correct road for diagnosis.

In a paper of this length, only a few of the diseases can be discussed. Hence, I will first mention a few of the organic nervous diseases, frequently confused with physical diseases which are usually differentiated by regarding some of the prominent objective evidence of the former that in many instances are overlooked entirely. Secondly, some of the so-called functional nervous disorders often unnecessarily confused with organic diseases in the nervous system, and points that are useful in the differentiation of the two.

Under the functional disorders I have selected as ones of the most importance, owing to the frequency of their occurrence and the urgency for an early differentiation, neuralgia, neurasthenia and hysteria. This triad have usurped the rights of almost every known disease.

Neither indigestion, rheumatism nor malaria have received half so much homage at the hands of medical men as these rather rare diagnostic "waste baskets." But thanks to modern medical progress they are being relegated to their rare, but proper place in diagnosis. In my experience the recognition and differentiation of these conditions from physical disease, outside of the nervous system, are less frequent than confusion with early organic disease in the nervous system, and in practically all cases well marked objective evidence of the real condition was available.

In the recognition and differentiation of these diseases I wish especially to call your attention to the investigation along three lines: pain, reflexes, and laboratory findings. Pain is, of course, the symptom for which we are most often consulted. Volumes have been written about it, but for our purpose we are especially concerned with its distribution, i. e., is it peripheral, root or central in distribution, and is it accompanied with tenderness? Pain may be functional, but tenderness is always organic. The study of the character of pain is subjective, while its distribution is objective; consequently, the more important for neurological diagnosis.

Peripheral pains must follow the anatomical distribution of nerves; root pains conform to the segments of the spinal cord; while central pain has no known anatomical or physiological distribution.

The importance of the reflexes lies both in their behavior and location. The principal ones are pupillary, abdominal, knee and Archilles jerk. Their exaggeration may be functional, but their absence is invariably organic, while the presence of ankle clonus or Babinski are always organic. The principal laboratory assistance is derived from the lumbar puncture of Quincke. Its performance is simple and harmless, while the information furnished is sometimes of inestimable value. The procedure is not utilized by the profession in ratio to its diagnostic assistance or indications for treatment.

The serum reactions are sometimes of much help, especially those for tuberculosis and syphilis.

The latter, however, has not been simplified sufficiently to be used by the physician, but requires especial training, experience, and extensive laboratory equipment for its utilization in diagnosis. The changes in the cerebro-spinal fluid, in many conditions, antedate the appearance of sufficient symptoms for diagnosis and positive findings are extremely valuable.

Returning to the question of pain, especial mention should be made of tabetic crises. A placard bearing the inscription, "Look out for Crises," placed in every operating-room would save many useless laparotomies, because a tap on the patella tendon, or a ray of light thrown upon a momentary shaded pupil would change the entire aspect of the case at once. This applies with equal force to the quantities of bismuth and astringents administered in the cases of intestinal crises; and urethras dilated or bladders irrigated in cases of vesical crises.

I cannot recall the history of a single case of tabes that does not show that the patient was treated for either rheumatism or neuralgia in the early stages. In this connection, neuralgia and neuritis should be mentioned. The question of the existence or non-existence of neuralgia, aside from neuritis, needn't concern us, but we should know that impaired motion, sensation, or nerve tenderness always means neuritis and not neuralgia. Neither do referred pains cause tenderness in nerve trunks, or motor or objective sensory phenomena. In all cases of pain or paresthesias, a little investigation as to whether it conforms to peripheral or root distribution means so much, and is so seldom done. Either Heads or Seiffers charts are reliable for this purpose.

With regard to the reflexes, a few points need emphasis. The loss of the pupillary light reflex or Argyll-Robertson pupil invariably means syphilis, its testing requires only a moment. The same applies to the patella and Achilles tendon jerk. The latter is frequently lost in early sacral tabes when the knee jerks are retained. A neurasthenic syndrome minus either tendon, abdominal or pupillary light reflex generally means tabes, paresis, cerebral or spinal syphilis, while hysterical manifestations minus abdominal reflex means multiple sclerosis or plus Argyll-Robertson pupil indicates syphilis.

All obscure pains or paresthesias plus pinhead or Argyll-Robertson pupils mean syphilis of the central nervous system, including tabes and paresis.

The time consumed in stroking the soles of the feet, and forcible flexing the foot on the ankle is well spent, when the mere presence of Babinski or ankle clonus definitely determines a lesion somewhere in the pyramidal tracts, and yet so few physicians utilize these simple procedures that many times hold the key to the situation.

All that has been said with regard to pain and reflexes, while affording most important and satisfactory information, is small as compared with the data gained from the lumbar puncture. In many instances these symptoms may be confusing or contradictory, but the presence of increase in the cellular elements of the spinal fluid is absolute and final in its demonstration.

The neurasthenic often presents many and obscure symptoms, and the hysteric is capable of simulating at times symptoms that are common to almost every known ailment, yet neither at any time has been able to adduce a cellular or chemical change in the constituents of the cerebro-spinal fluid.

In conclusion, I wish to state that while the observance of the above is not claimed to furnish an exact diagnosis of all nervous diseases, yet I do insist that if the profession will avail themselves of the information gained by more frequent use of these simple aids, fewer tabetics and paretics would have the seriousness of their condition go unrecognized so long, while many organic diseases of the nervous system would receive the benefit resulting from the institution of early and proper treatment. Illustrating cases could be cited "ad infinitum et nauseatum," in justification of the above, and to do so would practically entail the mention of hundreds of cases, covering fifteen years of experience, in dealing exclusively with nervous diseases in both public and private hospitals and in private practice. However, I do not deem it necessary, as a means of impressing upon you the importance of observing the points mentioned by a long list of cases, but hope that you will recall these points in your routine examination, and I am sure that the additional time spent will be amply rewarded, in many instances, by putting you in line for correct diagnosis.

STRANGULATED FEMORAL HERNIA CONTAINING AN UNDEVELOPED KIDNEY.

By J. WALTER SEAWELL, M. D., Healdsburg.

I first saw this patient in consultation with Dr. Kerr. He presented the following history: Male, widower, eighty-three years old. Had always enjoyed good health, with the exception that ever since he could remember he had been troubled with a lump that would appear from time to time in his left groin; the lump would remain for a few hours then disappear, but was always accompanied by pain in the epigastrium. About six weeks ago, began having pain in the epigastrium accompanied by vomiting, but the condition was not severe enough for him to consult a physician. One week ago was around as usual; five days ago, either during a vomiting spell or while lifting, the lump returned accompanied by severe pain and vomiting. Dr. Kerr was called and a diagnosis of strangulated hernia was made; an attempt to reduce under chloroform was unsuccessful; Dr. Kerr called in a surgeon who sustained the diagnosis made and advised immediate operation. On being called in on the fifth day I found the patient in a fairly good condition, pulse 80, temperature 99 3/5°, somewhat emaciated, small epithelion on the face, arteries somewhat sclerotic, lungs in good condition, abdomen apparently presented nothing except some distention over the epigastrium, also some resistance to pressure in that region, no particular tenderness in any one spot. In the left groin was a mass about the size of a hen's egg, firm to the touch, somewhat tender, immovable, was not tympantic, had exactly the same feeling that you would expect to find in a strangulated gut. Immediate operation was advised and consented to.

Operation. An incision was made directly over the mass; the contents of the hernia were exposed surprisingly quick; there was not any sac covering a blue black mass that at first appeared to be gut; no fluid surrounded it. On close examination the mass proved to be solid and attached by a pedicle, but closer examination proved the mass to be a small undeveloped kidney attached by its ureter. The femoral canal was enlarged and an attempt made to reduce the kidney, but it was hard to reduce and being afraid that it would give trouble if replaced, the organ was amputated, the ureter cauterized and the wound closed, leaving a couple of strands of silk worm gut as drainage.

The patient stood the operation well, soon recovered from the anesthetic. But it was soon apparent that the relieving of the strangulated kidney did not relieve him either of his vomiting or pain, as both seemed to get progressively worse. The vomitus, which was the first that I had the opportunity to examine, had the appearance and odor that you would expect to find in carcinoma of the stomach. The urine excreted was up to normal in quantity, showing that the kidney removed played a very small part in the secretion of urine. Dressing on the third day showed a clean wound. The patient died on the fourth day.

On examining, the specimen removed showed an undeveloped kidney nearly all sinus surrounded by a thin cortex. On the superior surface was quite a distinct cleft showing the lobulated condition that you find in the kidneys of an infant, weight ½ ounce, length 2 inches, 1 inch broad and about ½ inch thick.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Serums and Vaccines of the U. S. P. and N. N. R.*

2. Bacterial Vaccines (Bacterins)

The following Bacterial Vaccines described in New and Nonofficial Remedies have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

Acne Vaccine.—A vaccine prepared from acne bacilli (Bacillus acnes).

Bacillus Coli Vaccine.—(A suspension of killed bacillus coli communis in physiologic salt solution, with an added preservative).

Bacillus Pyocyaneus Vaccine.—(A suspension of killed bacillus pyocyaneus).

Friedlander Vaccine.—A vaccine prepared from the Friedlander bacillus.

Gonococcus Vaccine.—(A suspension of killed micrococcus gonorrhea (gonococcus of Neisser) in physiologic salt solution, with an added preservative).

Micrococcus Neoformans Vaccine.—A vaccine prepared from micrococcus neoformans.

Pneumococcus Vaccine.—(A suspension of killed diplococcus pneumoniae in physiologic salt solution, with an added preservative).

Staphylococcus Vaccines.—(Suspensions of mixed strains of killed staphylococcus pyogenes albus, aureus, and citreus, in physiologic salt solution, with an added preservative).

Streptococcus Vaccine.—(A suspension of mixed strains of killed streptococcus pyogenes in physiologic salt solution, with an added preservative).

Typhoid Bacillus Vaccine.—(A suspension of killed bacillus typhosus in physiologic salt solution, with an added preservative).

While N. N. R. gives indications for the uses of these various bacterial products, their use is confined to those specific infections to which these various pathogenic organisms give rise. Their applicability should wherever possible, be confirmed by bacteriological diagnosis.

Bacterial vaccines are conveniently classed as "stock" vaccines, and Autogenous (Homologous) Vaccines.

Stock vaccines are suspensions of killed pathogenic bacteria in physiologic salt solution to which phenol or trikresol has been added as a preservative. They are standardized to represent an approximate number of bacteria to the cubic centimeter. Stock vaccines may represent but one specific organism, or many diverse strains of an organism, in which latter case they are termed "polyvalent" vaccines. Or, they may consist of two or more different organisms, in which case they are termed "mixed" or composite vaccines.

An example of the former (polyvalent) is Streptococcus Vaccine. The streptococcus occurs in various modifications under such widely differing conditions as erysipelas, scarlet fever, and puerperal septicemia. A serviceable stock vaccine should therefore represent strains of streptococci derived from these various sources. If the vaccine does not represent the particular strain responsible for the infection, it is not likely that the vaccine will prove of service. This would characterize the limitations of the stock vaccine, but the case of the streptococcus is rather an extreme example of an organism's proneness to undergo modification. In most other instances differentiation is less marked and stock vaccines frequently have proved as serviceable as those prepared directly from infecting material taken from the individual source. The most extensively employed biological products are prepared from "stock" material, as for example—Diphtheria Antitoxin, Tetanus Antitoxin, Vaccine Virus, the various Tuberculins, and practically everything listed by producers of biological products.

Mixed Vaccines are a recent development in the field of vaccine therapy and their introduction is due to the fact that different types of organisms are found frequently associated in various bacterial infections. It has been observed also, that a pure infection in which but one type of organism is the etiological factor, may develop into a mixed infection, and further, the bacterial flora of a mixed infection may undergo modification in the course of the disease.

While the production of mixed stock vaccines savors of empiricism, their employment in some types of infections has been amply justified. Indeed, it would seem from the present tendency in this field of research that the mixed vaccine, correctly prepared and properly balanced, will become quite the proper thing.

One of the first vaccines of this type to gain prominence is a vaccine composed of killed staphylococci and the acne bacillus. These organisms are frequently found associated in Acne infections. Cultural growths from chronic gonorrheal infections frequently show a variety of organisms, chiefly: gonococci, streptococci, staphylococci, coli bacillus and Micrococcus catarrhalis. A vaccine representing as nearly as may be, the general run of gonorrheal infection, while suggestive of the "shotgun" device, has generally proved more efficacious than the straight gonococcic vaccines. In gonorrheal arthritis, in which the gonococcus alone appears to be the etiological factor, the straight vaccine is more commonly employed.

The pneumococcus, streptococcus and staphylococcus are frequently found associated in diseases of the respiratory tract and in other localized infections. Several mixed vaccines of this type have recently been passed upon by the Council on Pharmacy and Chemistry and included in New and Nonofficial Remedies (Jour. A. M. A., Sept. 9, 1911, p. 902).

While a legitimate field may exist for such products as Mixed Gonorrheal Vaccine, Staph-Acne Vaccine, and possibly a combination of the pneumococcus, staphylococcus and streptococcus, the multiplication of such empirical combinations is a questionable practice and savors rather too strongly of the proprietary nostrum. It is not conclusively established that the indiscriminate introduction of dead

* The first paper of this series appeared in the April, 1911, number of the California State Journal of Medicine.

cells or other bacterial products is incapable of doing harm. Is one justified, in an infection calling for large doses of Bacillus coli communis, to administer a vaccine containing proportionately large doses of pneumococci, streptococci and staphylococci, on the assumption that these organisms might in some remote manner be also implicated? Would it not be more to the point to first ascertain the presence of these organisms and the part each plays in the infection? The objection that in acute cases this procedure would occupy too much time can hardly justify the experimenting with an unknown quantity. Resort can be had to emergency measures of established value.

The work of Wright and his associates has leaned perhaps too sharply toward conservatism, but the accurate and painstaking effort of these men has given rise to definite and tangible results. They have demonstrated that the introduction of the dead bacterial cells stimulates the production of various bactericidal substances, as opsonins, agglutinins and bacteriolysins, and that these substances are capable of identification and verification.

The question of dosage is perhaps the most vexed problem confronting the user of bacterial vaccines. Some advocate a minute dosage, continuously increased and avoiding a reaction. Others suggest a dosage just bordering on a reaction, and still others insist that a violent reaction is essential. Then, in the matter of spacing of dosage. Some await the subsidence of the negative and positive phases before administering a subsequent dose: others give smaller doses at frequent intervals, and still others give large doses at intervals of twelve to forty-eight hours. Theoretically, the proper dose is that which will produce a mild reaction and this dose should not be repeated until both the negative and positive phases have subsided, when the dose can be somewhat increased according to the indications. It would seem, however, that other methods of dosage have yielded results where this method has failed. Awaiting the subsidence of a reaction generally gives the spacing of the dosage of from three to seven days.

It is evident that no hard and fast rules can be laid down as to dosage since it is impossible to determine beforehand what degree of active immunity a case is capable of developing, or the resistance of the individual. The tendency is toward larger dosage than that heretofore advocated. It is quite generally conceded that cases of chronic gonorrheal arthritis require a dosage ranging from 50 to 500 million bacteria.

In furunculosis and carbuncle the dose of staphyloccoci may be run up to several billion bacteria. In acne, and streptococcic infections, the tendency is toward more conservative dosage—within a limit of fifty or one hundred million bacteria. The tendency in the case of pneumo, typhoid, and coli vaccines is to employ larger dosage.

Within a radius of a hundred miles of San Francisco there are hundreds of physicians employing bacterial vaccines in their daily work. Many of them are getting good results and are using these products extensively. Others have had no results and want to know the reason why. Why do not more of these men report their experiences to their local bodies and the medical journals? Is it not worth while even though the results may not be announced before the world in glaring headlines? There is an urgent need for reports on the use of bacterial vaccines and biologic laboratories cannot supply satisfactory data without the physician's co-operation.

To quote again from New and Nonofficial Remedies—"Bacterial vaccines are used to aid the production of an active immunity. Great care and skill are necessary for their proper use and no definite statements as to dosage, etc., can be given; the physician must be guided by the condition of the patient and the manner in which the latter reacts to the treatment."

San Francisco, Oct. 24, 1911

PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY.

Notice.

To Members of the Pacific Coast Oto-Ophthalmological Society:

The following letter will explain why the joint session with the Eye, Ear, Nose and Throat Section of the California State Medical Society will not take place this year as advertised, but will be postponed until further notice:

(Copy.)

San Francisco, March 1, 1912.

P. M. Jones, M. D.,
Secretary California State Medical Society.

My Dear Doctor—From our conversation of today I am definitely informed that the Pacific Coast Oto-Ophthalmological Society cannot appear officially at the meeting of the California State Medical Society, because the Pacific Coast Oto-Ophthalmological Society has not made formal request of the Directors of the California State Medical Society. Therefore, we deem it advisable to postpone the meeting of the Pacific Coast Oto-Ophthalmological Society until co-operation can be brought about in a perfectly friendly and harmonious way.

Very truly yours,
CULLEN F. WELTY,
Secretary of Executive Committee.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of February, 1912, the following meetings were held:

Medical Section, February 6th, 1912.

1. Address by Mr. Frank Somers.
2. Address by Mr. C. H. Bentley.

Discussion by Harry M. Sherman, M. D., M. W. Fredrick, M. D., James T. Watkins, M. D., C. G. Kenyon, M. D.

3. The Hemolytic and Bactericidal Powers of "Paraffin" Plasma and Serum. Thomas Addis, M. D. Discussed by Wm. Ophuls, M. D., and L. S. Schmitt, M. D. (This paper will appear in the Journal of Infectious Diseases.)

4. A Plea for the Early Recognition and Proper Treatment of Hemorrhagic Disease in the New Born. E. Charles Fleischner, M. D. Discussed by Langley Porter, M. D., W. B. Lewitt, M. D. H. D'Arcy Power, M. D., A. J. Lartigau, M. D., L. Breitstein, M. D., Thomas Addis, M. D., and E. Charles Fleischner, M. D. (This paper will be published at a later date in the California State Journal of Medicine.)

5. Demonstration of Specimens of Sporotrichosis. Ernest D. Chipman, M. D.

General Meeting, February 13th, 1912.

1. Arthritis Deformans. A. L. Fisher, M. D. Discussed by C. C. Crane, M. D., Julius Rosenstirn, M. D., Langley Porter, M. D., R. B. Scheier, M. D., and A. L. Fisher, M. D.

2. The Sociological Side of Medicine. Philip Mills Jones, M. D. Discussed by Langley Porter, M. D., Raymond Russ, M. D., Julius Rosenstirn, M. D., and Philip Mills Jones, M. D.

Surgical Section, February 20th, 1912.

1. The Choice of an Anesthetic. Caroline B. Palmer, M. D.

2. The Present Status of Nitrous Oxide in Major Surgery. Mary Botsford, M. D.

3. A Practical and Simple Method of Maintaining Respiration During Operations Involving Opening of the Chest Cavity. Sterling Bunnell, M. D. (This paper is to be published in J. A. M. A.)

General discussion by Edith Hammond Williams, M. D., Mary Murphy, M. D., Dudley Tait, M. D., W. I. Terry, M. D., Harry M. Sherman, M. D., Caroline B. Palmer, M. D., Mary Botsford, M. D., Sterling Bunnell, M. D.

Eye, Ear, Nose and Throat Section, February 27th, 1912.

1. Preliminary Report of a Case of Ocular Tuberculosis Involving the Uveal Tracts and Vitreous of Both Eyes. E. D. Shortlidge, M. D. Discussed by Anna Flynn, M. D., W. S. Franklin, M. D., P. de Obarrio, M. D., Wm. F. Blake, M. D.

2. Presentation of a Case of Myringitis of Unknown Origin. Henry Horn, M. D. Discussed by H. B. Graham, M. D., W. S. Franklin, M. D., Henry Horn, M. D.

3. Demonstration of a case of Tonsillectomy Complicated by Post-diphtheritic Paresis. J. J. Kingwell, M. D. Discussed by Henry Horn, M. D., Cullen F. Welty, M. D., W. S. Franklin, M. D., J. J. Kingwell, M. D.

4. Report of an Operation on Ethnoid Sinuses. Cullen F. Welty, M. D. Discussed by W. S. Franklin, M. D., Julius Rosenstirn, M. D., Rachel Ash, M. D., H. E. Castle, M. D., M. W. Fredrick, M. D., P. de Obarrio, M. D., Cullen F. Welty, M. D.

5. Lantern Slide Demonstration of the Accessory Cavities of the Nose. Cullen F. Welty, M. D.

SOCIETY REPORTS

CALIFORNIA ACADEMY OF MEDICINE.

The regular meeting of the California Academy of Medicine was held Monday evening, Feb. 26th, 1912, at which the following program was given:

1. An Inquiry Into The History of Malaria in California, E. W. Twitchell, M. D. Discussed by Herbert Gunn, M. D., H. R. Oliver, M. D., Harry M. Sherman, M. D. and E. W. Tritchell, M. D.

2. Notes on Two Cases of Systemic Oidiomycosis. G. Y. Rusk, M. D. Discussed by Howard Morrow, M. D., H. R. Oliver, M. D. and G. Y. Rusk, M. D. (This paper will appear in The California Pathological Series).

W. F. Cummins, M. D. and Jacques Loeb, M. D. were elected to membership.

Refreshments were served at the close of the meeting.

COOPER COLLEGE SCIENCE CLUB.

The Cooper College Science Club held its regular monthly meeting on March 4th, 1912. The following scientific program was given:

1. A Few Cases of Tuberculosis. W. R. P. Clark, M. D. Discussed by W. W. Boardman, M. D., A. A. O'Neill, M. D., C. J. Teass, M. D., T. Addis, M. D., P. H. Luttrell, M. D., W. R. P. Clark, M. D.

2. Observations on the Diagnosis of some of the Diseases of the Upper Urinary Tract. R. L. Rigdon, M. D. Discussed by Adelaide Brown, M. D., C. J. Teass, M. D., R. L. Rigdon, M. D.

3. Trichiniasis. H. R. Oliver, M. D. Discussed by H. Gunn, M. D., H. R. Oliver, M. D.

Refreshments were served at the close of the program.

MERCED COUNTY.

The Merced County Medical Society met on February 29th at Merced. A paper on medical ethics was read and very generally discussed. Two new members were elected: Dr. J. L. Mudd, of Merced and Dr. E. L. Bunk, of Raymond, Madera County.

H. KYLBERG, Secretary.

POMONA BRANCH, LOS ANGELES COUNTY.

In February, Dr. Idris B. Gregory entertained the Pomona Branch of the Los Angeles County Society, together with the members of the San Bernardino County Society in the vicinity of Ontario, at her residence in that city. Papers were read by Dr. Smith and Dr. Kenyon of Pomona.

SAN BERNARDINO COUNTY.

The County Medical society held one of the most interesting and instructive meetings of the season last night at the County hospital in San Bernardino on invitation of the superintendent, Dr. P. M. Savage. After a short business session Dr. Savage was introduced and said that it gave him pleasure to entertain the members of the medical profession of the county and stated that it was his earnest desire to make the County hospital as highly efficient as possible in the treatment of the sick and at the same time to use the abundant clinical material there for the teaching and benefit of the medical profession as far as this could be done consistent with the best welfare of the patient.

The assistant superintendent, Miss Madge Ayres, then gave a short account of her experiences and methods of administration of anaesthetics as learned in something over 3000 cases while she was associated with the Mayo brothers in Rochester, Minn. Her paper was very instructive, was well received, and elicited many questions as to details. Dr. Savage then presented a remarkable case of brain abscess following a depressed fracture of the skull and outlined the history of the case and method of operation and demonstrated the patient in his present condition of recovery. The subject was discussed by Dr. B. F. Church, of Redlands, and Dr. McHugh, of Rialto. Another case of enormous abscess of the liver, followed by successful operation and complete recovery was presented. A patient who had long suffered from cancer of the stomach was shown together with the cancer which had involved a portion of the stomach the size of a small orange and had been successfully removed by operation. This patient had been entirely relieved of his symptoms and had gained in weight and it was hoped that the operation had been performed early enough so that the whole trouble had been removed. This case was ably discussed by Dr. H. W. Mills, of San Bernardino, and many others. The fourth and last case was an old fracture of the arm with a large callous which had grown out around one of the large nerves of the arm producing paralysis by pressure. This patient had been previously shown before the society at Redlands while paralysis was complete. Since that time an operation had been performed to free the nerve from the callous and the function of the arm had been almost completely restored.

Following the general discussion of these cases the doctors were invited to an adjoining room where a most dainty and appetizing luncheon was served by the young ladies connected with the hospital as nurses. There were twenty-seven doctors present. Those going from Redlands were: Drs. Davis, Tyler, Blythe, Church, Stillians, Hilliard, Taltavall, Shreck, Wagenseller and Verrinder.

TULARE COUNTY.

The regular meeting of the Tulare County Medical Society for February was held at Porterville on the 13th. Dr. J. B. Rosson, of Tulare, read a paper on Lodges and Examinations; Dr. S. A. Barber read a paper on Overlooked Injuries of the Shoulder Joint. At the close of the meeting a banquet was held at the Pioneer Hotel.

VACCINATION LAW.

When the anti-vaccinationists got the present vaccination law passed, they professed willingness to accept the provision that in case of an outbreak of smallpox, unvaccinated children should be excluded from the schools until the smallpox disappeared. But now that the actual situation confronts them they protest and insist that the rule ought to apply only in the case of a widespread epidemic. In other words, what they want is a law that will make vaccination optional with

the individual, and they will never rest satisfied with any law which makes it a community matter.

This is exactly the issue, and exactly on this point it must be met. If the prime purpose of vaccination were individual protection, then it might properly be left to each individual to determine whether he would take the slight but certain risks of vaccination or the great but remoter risks of smallpox. The only reason for taking steps to make vaccination practically universal is that its protection is a community protection. Individually, vaccination is not a certainty, nor a necessity. In an unvaccinated community the vaccinated individual is relatively but not entirely safe. He may get the smallpox. In a vaccinated community the unvaccinated individual is practically safe. He is susceptible to smallpox, but the community has guaranteed him against any likelihood of being exposed to it. So the whole thing is a community question. In a generally vaccinated community an epidemic of smallpox is impossible, though there may be individual cases, and an occasional one of these may affect a vaccinated person. In a generally unvaccinated community a smallpox epidemic is sooner or later inevitable, and belated individual vaccinations, when the epidemic comes, are by no means a certain individual protection.

It follows that communities must be generally vaccinated, and that it requires something more than an appeal to individual protection to get them vaccinated. So long as the community is generally vaccinated, the individual appeal is, in fact, meaningless. One cannot truthfully say to the separate individual that separately he needs vaccination; and the natural tendency of human nature is for each individual to regard himself individually, and to shift the communal burdens to others. It is like paying taxes. If nobody paid taxes, individual as well as communal life would be impossible. But any one individual could escape his personal tax without injuring the community enough to inconvenience him individually. Voluntary tax-paying has therefore been found impracticable. Each man will pay his taxes only upon some guarantee that the others will do so also. It is the same with vaccination. A disagreeable experience, with a remote incidental risk, is not going to be undergone by many individuals unless they have some satisfactory guarantee that others will undergo it also. Why should one contribute his share to the common protection, if that protection is not going to be accomplished?

The conclusion is that vaccination ought to be compulsory, with exceptions only when there is a medical reason, certified by medical authority, for making the exception. Those individuals to whom the vaccination is an undue risk may safely be left unvaccinated, provided they are the only ones. But in these days when the hallucination has become prevalent that the care of disease is a matter of creed and conscience, the conclusion has been drawn that exceptions should be made for conscientious as well as for physical reasons. That, too, might not produce any more exceptions than are safe, provided that it could be confined to objections that are really matters of conscience. A conscientious objection is a moral objection—a belief that vaccination is an immoral act. But in practice, "conscientious objection" means no more than a personal preference that others should do the community protection. That preference is too common an attribute of human nature to make it safe to allow it unrestricted control of communal acts. If there are to be exceptions to the vaccination requirement on other than medical grounds, those who choose to come under that exception must meet their community obligation in some other way. It is little enough to require of them that if they choose to be one sort of exception, they shall be another sort also. If they may attend school in ordinary times without the general requirement, they must stay away from school, in smallpox times, even though the epidemic has not reached serious proportions. It is to be hoped that no epidemic ever will reach those proportions. It will not, under present quarantine and vaccination regulation. It will, on some occasion—and no one can tell which—if these regulations are habitually relaxed.

Of course all this argument is based on the assumption that we are living in a real world, in which disease, and the prevention and cure of disease are facts, in regard to which there exists real knowledge. We are painfully conscious that there are persons who deny all these propositions. And we have often expressed the conclusion that the proper place for those persons to make that denial is the court where the microbe presides, and that the amount of liberty of conscience on these subjects that can be granted is the amount the microbe can be induced to yield. If the microbe is deaf, blind, mindless and ruthless, then, on these questions we are under a deaf, blind, mindless and ruthless rule, from which no mere process of argument can release us. In matters of disease, the microbe exercises legislative, executive and judicial powers. And he is no respecter of persons or conscience. We are not saying this is right. We are merely saying that those who think is it wrong must make their argument in the microbe's court, and get their hearing as the microbe will grant. For the microbe has—and exercises—the power of life and death. That may be wrong too. But tell it to the microbe.—Fresno Republican.

BOOK REVIEWS

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, A. B., M. D., W. B. Saunders Company, Philadelphia and London, 1911.

The difficulty in writing text-books about any of the specialties is to be sufficiently brief for the practitioner and sufficiently comprehensive for the specialist. The author of this volume has not attempted the impossible. The result is a book of five hundred and seventy three pages from which doctrinal discussions are eliminated and in which the essential facts of diagnosis and treatment are consistently kept in the foreground. The volume is eminently, therefore, one for practitioners, but so well is the author abreast of the progress in his subject and so judiciously is the best thought of all countries presented that the book cannot fail to appeal to specialists and particularly to those who are teaching. The author follows the more usual classification on a pathologic basis which cannot be criticized as a defect though it is open to question if a grouping of diseases according to etiology will not be more helpful to practitioners. No attempt has been made at colored illustrations which is perhaps excellent judgment for such plates unless of exceptional merit are quite as likely to be misleading as helpful.

A pleasant omission from this volume is the use of such terms as mag. carb., ac. arsen., hydrarg. biniod. etc. Most of the author's prescriptions are conscientiously completed. The habit of slip-shod abbreviation in prescription writing should not pass unrebuked, for it is of paramount importance that our text-books should teach by example as well as by precept.

The distinctive feature of the volume is the chapter on the acute eruptive fevers. In no department of medicine is an authoritative ready reference more essential than in this and the practitioner will find here within easy reach the very facts he is at all likely to need. An interesting

chapter on actino-therapy, radio-therapy, opsono-therapy and refrigeration will keep the reader informed of the progress to date in these various modes of treatment. Careful examination of the volume leaves one with the agreeable impression that both the author and his publishers have done their respective tasks so well that there is little to criticize and much to praise.

E. D. C.

Practical Medical Series, 1911, vol. IX—Skin and Venereal Diseases. By William L. Baum, M. D., and Miscellaneous Topics by Harold N. Moyer, M. D. The Year Book Publishers, Chicago, 1911. Price $1.50.

The attempt to combine in one small volume the Year's literature concerning dermatology, venereal diseases and various miscellaneous topics connected with medicine would argue either for paucity of material or incompleteness of treatment. In this volume dermatology occupies sixty eight pages, Genito-urinary Medicine and Surgery ninety eight pages while the remainder of the book is devoted to such subjects as Medical History, Insurance, Medico-legal Questions and Sociology. It is regrettable that the authors have not found sufficient material of interest to fill one volume devoted exclusively to skin and vereal diseases. However interesting the extraneous articles may be they tend to give to the volume the effect of something put together in a hurry. In the limited space alloted to dermatology room has been found for commendable articles on pellagra, lepra and fungus infections of the finger nails. Nevertheless a comparison of the year's literature in dermatology with the sixty eight pages representing it leads inevitably to the conclusion that the ground has been insufficiently covered. Genito-urinary diseases, which include Syphilis about which an entirely new literature is rapidly developing, are quite as curtly treated. Even Salvarsan is dismissed with a few desultory references. It is to be hoped that this book will not be accepted by practitioners as a true reflex of progress in the specialties which it professes to epitomize.

E. D. C.

Text-Book of Meat Hygiene. By Richard Edelmann, Ph. D. Authorized translation revised for America by John R. Mohler, A. M., V. M. D., and Adolph Eichhorn, D. V. S. Published by Lea & Febiger, Philadelphia and New York, 1911.

I have reviewed with pleasure the Text-Book on Meat Hygiene by Richard Edelmann and unhesitatingly state that I know of no other work that can compare with its clear, concise and practical presentation of the important subject of meat and meat-food products, their inspection and judgment. For health officers and inspectors it is an invaluable aid and guide, because it covers this field of their work in detail with a minimum amount of reading. From the standpoint of the medical practitioner it supplies a long felt need, in that it gives in detail the preparation of one of the most important articles of food for human consumption, from the time the animal arrives at the abattoir until it reaches the consumer, describing all the pathological changes resulting from diseases peculiar to animals, which render meat or its products unwholesome for food purposes. Unwholesome meat and meat products, fish, poultry, game, etc., are causes of illness only too frequently overlooked or underestimated by the busy practitioner, because of the lack of training in the detection, or even existence, of the subterfuges resorted to by unscrupulous dealers to cover up pathological conditions and post-mortem changes that occur in this food product. It is a valuable adjunct to any library.

W. C. HASSLER.

THE MOOSE DOCTOR IN CANONSBURG.

The physician who does the Mooses' work here is paid at the munificent rate of 11 cents a month for each and every member. This amounts to $1.32 annually for medical and surgical services including surgical dressings. There are 290 of them and the year's work will bring him in the magnificent sum of $389.80 for which he has to take the dirty back talk of a lot of men who do not want him, and whose families will not tolerate him at all. He makes bi-weekly reports of all cases and is liable to suspension or dismissal at any time. Besides all this he is looked down on by the rest of the profession as a low-brow who cares for himself only. Surely no intelligent young man would care to enter this class if he but knew what it leads to.—Medical Program, Washington County, Penn.

Clinical Diagnoses. By Charles Phillips Emerson, A. B., M. D., Late Resident Physician, The Johns Hopkins Hospital, and Associate in Medicine, The Johns Hopkins University; Professor of Medicine, Indiana University School of Medicine. Third Edition. Philadelphia and London. Price, $5.00. J. B. Lippincott, 1911.

Three years have elapsed between the second and third editions of this valuable text-book. This time is too short for the contribution of much that is new, "whose value is reasonably certain," as the author says in his preface. However, about forty important pages have been added, including the use of antiformin for the detection of tubercle bacilli and the newer tests for the estimation of the functional activity of the stomach, the intestines, and the kidney. Some further information is given concerning the viscosity of the blood, the parasitology of the feces, and the pathology of the cerebro-spinal fluid. Dr. Wm. L. Moss has rewritten his sections on Opsonins and the Wassermann Reaction. Dr. Emerson speaks from actual experience, therefore the student and the general practitioner will find this excellent work a most reliable guide in the clinical laboratory.

R. L. ASH.

DR. ELIAS S. COOPER, SURGEON.

In a recent "Bulletin of the Society of Medical History of Chicago," it is recorded among other incidents in the early history of medicine in Illinois that "Dr. Elias S. Cooper was the first man to use chloroform as an anesthetic, west of Pennsylvania."

"Also it is mentioned that he was the competitor of Dr. Joseph Freer for the position of Demonstrator of Anatomy in Rush Medical College; an active member in the early proceedings of the Peoria Medical Society."

"He studied Anatomy and Surgery in Paris. He built the first hospital in Peoria, Illinois, and later he removed to San Francisco where he became the most renowned surgeon on the Pacific Slope and in whose honor Cooper Medical College was named."

From the foregoing incidents it appears that Dr. Cooper began his career with the same spirit of progress and zeal in his profession which characterized his advent in California and made him the pioneer worker in research, medical education and medical journalism.

The writer of this historical note was a student assistant in the service of Dr. Daniel Brainard, Professor of Surgery in and founder of Rush

Medical College, and remembers the frequent mention of Dr. Cooper by Dr. Brainard, as a young surgeon of ability and promise whom he had encouraged and aided in his ambition to widen his field of opportunity by joining the tide of emigration at that time setting in for Oregon on the Pacific.

A brief sojourn in Oregon convinced Dr. Cooper that San Francisco was a better field for him to grow in, and to found a Medical School and to teach Surgery as his friend and ideal surgeon had done in founding Rush Medical College in Chicago.

Dr. Brainard was an enthusiastic investigator in science, discoverer and demonstrator of new procedures in surgery, and his papers commanded the attention and discussions of the Academy in Paris as I learned some years after from a friend and fellow member Baron Larrey, then the Surgeon in Chief of the French Army.

Naturally, an intimate association with Dr. Brainard who had earned his way to the head of the medical profession in Illinois, and the leader in medical education, would inspire the ambitious young surgeon, Dr. Cooper, who had already manifested a similar ambition, to follow in his footsteps and this train of events as I see them determined the establishment of the Medical College of the Pacific in San Francisco, which was the first School of Medicine on the Pacific Coast.

A few years later the nephew of Dr. Cooper, Dr. Levi Cooper Lane, came into the new College, also from Illinois, well equipped with scholastic attainments and sharing alike with Dr. Brainard and Dr. Cooper their love for surgery and exalted beneficence, a worthy follower to supplement and to perpetuate the great work of his uncle, Dr. Cooper.

It was through my pupilage and long association with Dr. Brainard that I came to know of Dr. Cooper and to know personally Dr. Lane.

Reviewing, after these many years, the character and achievements in the lives of these three men, I am impressed by the similarity of their abitions, their methods and their achievements.

The dominant spirit in their lives is concisely expressed by Dr. Lane in the dedicatory tablet in Lane Hospital, "for the advancement of the seience and art of medicine and surgery for humanity's sake."

C. N. ELLINWOOD, M. D., LL. D.

NEWS NOTES FROM NEWSPAPERS.*

"And now the time has come to talk of other things
"Of carpenters and sealing wax and cabbages and kings."

Dr. David Starr Jordan is to give a lecture on Social Hygiene at the Auditorium, Los Angeles, on April 2nd.

At Woodland, on February 23rd, Mr. Lackenback gave a public lecture on Bacteria and Disease.

Dr G. C. Simmons, of Sacramento, has declined to be renominated for City Trustee; he states that he intends to go abroad.

Smallpox in San Bernardino County has caused about half the pupils, in some places, to be removed from the schools.

Dr. R. A. Buchanan, of Lodi, met with a serious accident in February, as a result of which he had to have his leg amputated.

Sanitary inspectors in San Francisco are hereafter to be physicians and are to be paid $200 per month and devote all their time to the work.

At Pasadena, Pomona and other places in the South, Dr. E. C. Jaeger, of Riverside, has been giving a course of public lectures on "Frenzied Health Wrecking."

A tubcrculosis ward of the Sacramento County Hospital, planned by Dr. J. H. Parkinson and Dr. J. L. White, is to be constructed; work has been begun upon it.

The Sanatorium at Box Springs, which, it was contemplated, would be run as a semi-public institution, is to be taken over by Dr. Tucker and Dr. Griffith of Riverside.

Dr. Fred Baker, of San Diego, has returned after an absence of many months during which time he was with an exploring party in the Northern part of South America.

Dr. William Colby Rucker, who was Dr. Blue's assistant during the plague work in San Francisco, has been ordered to Washington where he is to be Dr. Blue's assistant once more.

The superintendent of the Butte County Hospital reports that whereas the average number of malarial patients treated has been about 25 per year, last year there were but four.

Dr. Howard M. Engle, of San Francisco, has been sued for $13,330 for alleged malpractice. Dr. Engle is not a member of the State Society and so, unfortunately for him, will have to defend the suit.

Dr. W. F. Snow, Secretary of the State Board of Health, attended the meeting of the Council on Medical Education of the American Medical Association at Chicago, the latter part of February, as the delegate from California.

Smallpox at Fresno has caused the exclusion of some 120 unvaccinated children from the schools. It is said that a citizen of that community, whose two children are not vaccinated, is to bring suit to test the present vaccination law.

Dr. A. E. Osborne, formerly of Santa Clara, and recently appointed Superintendent of the State Hospital at Napa, is said to be strongly in favor of constructing a number of sleeping porches similar to those in use at the Stockton institution.

Dr. Donald H. Currie has been assigned to plague work in California. Dr. F. E. Trotter, who has been quarantine officer at San Francisco, has been ordered to Honolulu. Dr. M. W. Glover has been made quarantine officer at San Francisco.

The doctors and lawyers of Monterey County got together at a banquet on February 22nd and seem to have told eaeh other some humble truths and some amusing anecdotes. It is an excellent idea that might well be followed in other communities.

Dr. T. C. McCleave gave a public lecture on milk, its supply and contemination and the value of clean dairies and pure milk, at Stockton, February 23rd. It was illustrated with lantern slides showing how epidemics may be spread through the use of improper milk.

The Honolulu "Commercial Advertiser" states that, in all, seven leper patients have been released on parole by the board of health, all of whom have been apparently cured of the disease arrested through the carbon monoxide snow treatment of Dr. Wayson. All the patients on parole continue under observation.

The notorious Dr. M. G. Chenowith has been indicted and arrested under the charge of obtaining money by false pretense and the district attorney of San Franciseo believes that he will be eonvicted, the case taking the same general lines as the Arberry case.

A quarantine station at San Pedro is being urged by the citizens of Los Angeles.

Dr. A. M. Henderson, of Sacramento, his wife and his sister-in-law have jointly bought the site of the Southern Pacifie Hospital, 7th, 8th, F and G Streets, Sacramento, for $32,500.

Of making "Hospital Associations" there seems

* It is impossible to give credit to all these papers. We cannot be responsible for any errors.

to be no end. A new one has just been incorporated at Stockton called the "People's Hospital Association of California."

Rabies having appeared at San Francisco, the State Board of Health has established a station at Sacramento where patients may receive the Pasteur treatment, should the disease make its appearance in that section, as is more than likely it will.

Dr. N. K. Foster, in charge of the Health Department of the Oakland public schools, has urged the establishment of a municipal clinic for school children.

Senator Owen gives some good advice. As the Federal government spends a good deal of money looking after the health of hogs and none at all for the health of the people, his advice is—"Be a hog."

Smallpox has appeared at Truckee, three cases having been reported from that place in the last week in February.

Dr. Frank Rattan delivered a lecture to the Woman's Improvement Club of Martinez on the subject of general public health and the prevention of disease, putting particular emphasis on the fly nuisance.

Dr. W. P. Burke, who was given a ten-year sentence upon conviction of trying to dynamite Luetta Smith, was refused a rehearing by the appellate court and applied to the Supreme Court for a rehearing. His petition is typical of the sort of thing that is bringing our courts into popular disrepute, because of their activity in the interests of the pure technicality. He claims that the verdict should be set aside because the indictment was insufficient in that it did not contain a description of the place where he was alleged to have set off the dynamite.

A peculiar accident happened to Dr. W. H. Baldwin of Sacramento. He cranked his automobile, started the engine and the machine promptly ran over him, breaking several ribs and causing internal injuries.

An amusing item is dated from Cleveland where, it is said, several society women took advantage of the lenten "off season" to have appendectomies performed.

The Rev. R. E. Blight (singularly appropriate name) has been delivering more lectures in the South, passionately advocating "medical freedom;" everything should be free, even disease. There should be proper regulation, of course, but no proposed form of health regulation is considered by Mr. Blight and his ilk, as "proper." Same old fake.

A case of smallpox appeared in Redding the latter part of February.

The San Bernardino County Medical Society has sent out a considerable number of bulletins relating to the Owen bill and the "league for medical freedom." This ought to help educate the people in that county.

Hookworm patients, to the number of 140,000, were treated by the Rockefeller Commission during the last year. The cost of the work is said to have been $148,000.

A case of smallpox has been reported from Chico.

Dr. W. A. Clark, for eighteen years superintendent of the Alameda County Infirmary, has resigned and Dr. C. A. Wills has been appointed.

Dr. B. F. Surryhne delivered an address on Tuberculosis before the Woman's Club at Modesto.

Several newspapers scattered about the State are, from time to time, publishing editorials on public health matters and medical advances. It would be a good thing for the people if more newspapers would do the same thing.

The Tuberculosis Commission had a meeting at Sacramento on February 24th. The Commission, under the direction of the State Board of Health, is to investigate the condition of tuberculosis in California and to report to the legislature. Dr. George H. Kress, of Los Angeles, is the Chairman of the Commission.

Prof. Leslie, of the Los Angeles School Department, has advocated the establishment of a psycho clinicist to examine into the psychology of the school children. Not a bad idea.

Measles was epidemic in Fresno from January till about the middle of March; something over 70 cases occurred and kept Dr. George H. Aiken, the County Health Officer, busy quarantining people.

W. B. Saunders Co., 925 Walnut street, Philadelphia, has issued a new catalog of books that is well worth looking through. A request to them will bring it to you and prove interesting.

The sort of trade literature that is really of value and not merely a nuisance is well illustrated in the pamphlet on "Why Digitalis Sometimes Fails," issued by the Hoffmann-La Roche Co. It has nothing to say for itself about its own preparation but merely compiles a large number of extracts from various publications on the subject of digitalis.

Dr. S. S. Bogle, for many years County Health Officer of Sonoma County, has resigned and Dr. P. A. Meneray has been appointed.

The new vaccination law is in trouble at Fresno. The School Board has refused to accept the order of the Health Board and exclude from school all unvaccinated children; they apply the exclusion rule only to children living in the same block with the quarantined smallpox patient. The case will probably be fought out in the courts.

In Sacramento some citizens have started a rumpus, alleging that paupers who die in the County Hospital are merely weighted and dumped in a sump behind the building. It is a rather gruesome tale that the newspapers tell and probably is greatly exaggerated.

Smallpox has been reported at Coalinga and at Watsonville.

The Tubercular Hospital at the Veterans Home, Los Angeles County, has been completed and will be occupied and in use as soon as the furniture is installed. From the descriptions printed, it seems to be an excellently planned and constructed building.

"Reports of the Chemical Laboratory of the American Medical Association," Volume 4, January to December, 1911, is now issued and ready for distribution. Copies may be had for twenty-five cents each upon application to the Association, 535 Dearborn Avenue, Chicago. Every member of the Association should have a copy of this instructive pamphlet and should read it. Few of us have any realization of the enormous work the Association Laboratory is doing, or its very great value to the people and to the medical profession.

Dr. Stanley Black, health officer of Pasadena, quarantined a patient suspected of having smallpox. This created quite a storm of protest and when it was subsequently found that the patient did not have smallpox, Dr. Black resigned in order to quiet the tempest that had blown up.

Rabies in San Francisco is a long way from being merely a theory. In February, twelve persons were bitten by two dogs, one of which was later proven to have rabies. Of these twelve people, four refused to take the Pasteur treatment. One of them is dead at the time of writing. A full report of some of these cases will appear in an early issue of the Journal.

DR. MENZ; A WARNING!

The Santa Clara County Medical Society has requested the Journal to extend a warning to the physicians of the State against a person calling himself Dr. Menz. "This gentleman proved himself a 'slick citizen' by approaching a number of our medical men with a well rehearsed hard luck story and relieving them of sums of money ranging from two to fifteen dollars none of which has ever been repaid. Similar reports come to us from Riverside and Los Angeles.

CHINOSOL CRITICISED IN ERROR.

In the March number of the Journal "chinosol" was listed in error with sundry nostrums. Chinosol has been approved by the Council on Pharmacy and Chemistry and is in every way a reputable preparation. Its inclusion was merely an oversight, much to be regretted for the reason that there are plenty of bad nostrums without dragging in any preparation that is worthy of approval. It may be said in passing that this statement is made gratuitously; we have received no complaints and no threatening letters from the Chinosol Company, for which we wish to extend our thanks and appreciation.

NEW AND NON-OFFICIAL REMEDIES.

Since publication of New and Non-Official Remedies, 1912 and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Non-Official Remedies":

Neisser Bacterin Mixed, a gonococcus Vaccine, each cc. being said to contain approximately 100 million each of killed staphylococcus (aureus, albus and citreus) and 50 million each of streptococci, B. Coli, B. pseudo-diptheriae and gonococci. It is marketed in packages of four 1 cc. ampules. Also marketed in vials of 20 cc. and in 4 syringes, Syringe A being of the composition mentioned above and constituting the initial dose, while Syringes B, C and D contain, respectively, 2, 4 and 8 times the amount of bacteria contained in Syringe A. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Pneumo-Bacterin Mixed, a pneumococcus vaccine, each cc. being said to contain 50 million killed pneumococci, 25 million killed streptococci and 50 million killed staphylococci. Also marketed in vials of 20 cc. and in packages of 4 syringes, Syringe A being of the composition mentioned above and constituting the initial dose, while Syringes B, C and D contain, respectively, 2, 4 and 8 times the amount of bacteria contained in Syringe A. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Scarlatina-Bacterin (Scarlet Fever Vaccine), a streptococcus vaccine, consisting of a suspension of killed streptococci obtained from scarlet fever cases. Marketed in packages of 4 syringes, Syringe A containing 50 million killed streptococci, while Syringes B, C and D contain, respectively, 2, 4 and 8 times the amounts of bacteria contained in Syringe A. It is also marketed for immunizing purposes in packages containing 3 doses ready for use and sufficient to immunize 1 person. Also in 20 cc. vials, sufficient for immunizing 5 persons. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Typho-Bacterin Immunizing, a typhoid vaccine, marketed in packages containing 3 syringes; the contents to be injected subcutaneously at intervals of ten days. Hospital-size packages contain 30 ampules, in sets of three. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Staphylo-Bacterin Mixed, a staphylococcus vaccine, composed of a suspension, each cc. containing 25 million killed streptococci, 100 million killed staphylococci and 50 million killed B. coli. It is marketed in packages of four 1 cc. ampules. Also in 20 cc. vials and in packages of 4 syringes, Syringe A being of the composition given above, while Syringes B, C and D contain, respectively, 2, 4 and 8 times the amount of bacteria contained in Syringe A. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Von Pirquet Test for Tuberculosis consists of old tuberculin in capillary tubes. Each tube contains old tuberculin sufficient for one test. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Rabies' vaccine is an antirabic vaccine prepared according to the method of Pasteur. It is a complete treatment, consisting of 25 doses, to be administered during 21 days. Each day's injection is shipped in a Caloris vacuum bottle. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Bass Test for Typhoid Fever is a modification of the method of Widal consisting of a suspension or emulsion of killed typhoid bacilli, a glass slide on which to mix the emulsion with suspected blood, a slide with dried smear of infected blood, a needle for pricking ear or finger to obtain suspected blood from the patient and a pipette for dropping typhoid emulsion and water on slide, previous to mixing with suspected blood. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Mulford's Widal Test Outfit is a means of applying Borden's modification of Widal's Test. In this test the serum of the blood is mixed with salt solution and then with a suspension of killed typhoid baccilli, so as to bring the dilution up to 1 to 50. The positive reaction is determined by noting that the clumps of bacteria sink to the bottom of the test tube and leave a limpid, clear fluid above a small, white flocculent mass of agglutinated baccilli. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Feb. 3, 1912, p. 343).

Gynoval is isoborneol isovalerate, CH_3 CH (CH_3) CH_2 COO C_{10} H_{17}. It is closely related to bornyval (see N. N. R., 1912, p. 49). It is difficultly soluble in water. The action of gynoval is said to be that of a mild nervine and antispasmodic, resembling that of valerian, with the advantages of a much more agreeable odor and of being better tolerated, especially not giving rise to unpleasant eructations. Like other valerian preparations, it is said to be indicated in nervous headaches, nervous insomnia, nervous disorders of the climacteric, hysteria, cardiac and gastric neuroses and neurasthenia. 0.25 to 0.50 gm. (4 to 8 grains) two to four times daily, best given after meals. Gynoval is marketed in the form of gynoval pearls, containing 0.25 gm. (4 grains) gynoval. Farbenfabriken of Elberfeld Co., New York (Jour. A. M. A., Feb. 10, 1912, p. 411).

Exsiccated sodium succinate (Sodii Succinas Exsiccatus) is the disodium salt of succinic acid containing not less than 95 per cent. anhydrous sodium succinate, NaOOC CH_3 CH_3 COONa. It is a white granular odorless powder, possessing a characteristic saline taste. It is readily soluble in water, but insoluble in alcohol, ether and chloroform. It is a saline cathartic claimed by some to have an antiseptic action in the biliary tract and to be useful in combating infections of the gall bladder and biliary passages. Dose, 0.3 gm. (5 grains) three or four times a day. Manufactured by Fairchild Bros. & Foster, New York, and by Merck & Co., New York (Jour. A. M. A., Feb. 24, 1912, p. 554).

To the Editor of the California State Journal of Medicine:

In the discussion of Dr. R. A. Peers' paper in the March number of the State Journal, I find the following remarks attributed to our distinguished colleague, Dr. Philip King Brown:

"Regarding the use of tuberculin, I want to say not only of tuberculin but of preparations of arsenic, that it is an exceedingly dangerous thing to draw deductions when the patients use two remedies, particularly tuberculin intravenously, which is against all human laws for the use of tuberculin."

Assuming Dr. Brown to be correctly reported, his statement fills me with considerable alarm. Be it noted that the words are "human law." If the same came from anyone less noted for mastery of the English language and lucidity of scientific expression, I would naturally have surmised that natural law, divine law, or scientific doctrine was really meant; but then the statement would be meaningless, and with Dr. Philip King Brown as its author, that is impossible. It must, therefore, mean just "human law," and some fanatical legislature has forbidden intravenous injections. Now this is a matter of serious concern to the writer, because he has been in the habit of injecting just these very medicaments intravenously, and hoped to continue the practice. Will Dr. Philip King Brown kindly tell me when and where the statute was passed? MAX ROTHSCHILD.

IN FREEDOM'S NAME.

Once more the Republican feels bound to rush to the defense of the Medical Freedomists. If medicine, like religion, is a matter of sects (and it is on this contention that the whole of Medical Freedomism rests) then the guarantee against sectarian teaching in the schools must apply to medicine as well as to religion. But the present course of study in the schools of California includes the most blatant sectarianism, in matters hygienic and physiologic. The children, for instance, are being taught that malaria is transmitted by mosquitoes. That is, to be sure, a demonstrated scientific fact, but shall the state establish Science, when there are sects which deny it? There are those who say that malaria is tranmitted by fear, or unfaith, or by malicious animal magnetism. Just now the children are being taught that tetanus, or lockjaw, is caused by certain bacteria, found in dirt, which may infect a wound made by a dirty object. That, too, is a demonstrated scientific fact. But there is a sect whose creed is that lockjaw is caused by a displacement of the third cervical vertebra, and another which subscribes to the dogma that it is a variant of the itch. Moreover, everybody's grandmother knows that it is caused by none of these things, but is a mere reflex of the agonizing pain produced by impalement on a rusty nail. With all these faiths prevalent, shall the schools arbitrarily select that one among them which happens to be scientifically proved? That would be enthroning science above faith, which is exactly what the League of Medical Freedom was formed to prevent. They are teaching hygiene in the schools, and among other things they teach that a daily bath is good, especially for babies. That is outright sectarianism, not merely medical, but religious. For there is a church in Fresno whose chief scripture teaches in so many words that there is no more reason for immersing a baby daily in water than there would be for taking a fish daily out of the water and exposing it to air. The children in school are taught to boil all suspicious water. But there is a sect which teaches that the only thing wrong with the water is the suspicion, and that the remedy is not to suspect it. And all the children are taught that tuberculosis is transmitted by careless spitting and is prevented and cured by fresh air. All these are material things, and the teaching in regard to them squarely contradicts the doctrine that disease is a phenomenon of mortal mind, to be cured by getting on another spiritual plane.

We call on the League of Medical Freedom to protest. For the fundamental tenet of that League is that there is no such thing as positive fact or definite knowledge in the field of disease and health, but only various creeds and the sectarian practices founded in these faiths. If this tenet is correct, then science is only one sect among others and must be banished from the schools. There is no answer to this argument except to deny the tenet in toto. And for that denial there could be no basis except the evidence of the senses and of the reason, and the consensus of the informed opinion of the world. Shall Faith yield to mere knowledge? Not if the League of Medical Freedom can help it.—Fresno Republican.

CHANGE OF ADDRESSES.

Gage, C. E., from 1472 23rd St., Los Angeles, to 418 Crocker St., Los Angeles.

Larswell, B. J., from Oroville to Portola, Cal.

Collings, H. A., from San Francisco to Winters, Cal.

Thompson, W., from Los Angeles to Huntington Beach, Cal.

Galehouse, F. C., from San Rafael to 816 Devisadero St., San Francisco.

Ledyard, C. C., from Wendling, Cal., to Cloverdale, Cal.

Ross, M. H., from 16th and Main Sts., Los Angeles, to Auditorium Bldg., Los Angeles.

Detling, F. E., from Laughlin Bldg., to Title Insurance Bldg., Los Angeles.

Miller, A. P., from Berkeley to Forum Bldg., Sacramento, Cal.

Wilson, G., from Odd Fellows' Bldg., Sacramento, to Forum Bldg., Sacramento.

Gundrum, F. F., from 1010½ J St., Sacramento, to 1021 10th St., Sacramento.

Shaw, F. E., from 2630 P St., Sacramento, to Hagelstein Bldg., Sacramento.

Wilcox, Wm. V., from Roseville to 501½ K St., Sacramento, Cal.

Dillon, G. P., from Box 73, Sacramento, to Ochsner Bldg., Sacramento, Cal.

Conrad, D. A., from 1302 State St., Santa Barbara to 1011 State St., Santa Barbara, Cal.

English, C. F., from Tuolumne to Ellis Bldg., Stockton.

Schroeder, Leo A., from County Hospital, Los Angeles, to Exchange Bldg., Los Angeles, Cal.

Slater, Jno. H., from 1231 Olive St., Los Angeles, to Security Bldg., Los Angeles, Cal.

McLaren, Jay L., from Oakland to H. W. Hellman Bldg., Los Angeles, Cal.

Tebbitt, Robt. L., from 701 Alvarado St., Los Angeles, to Grant Bldg., Los Angeles.

Ochsner, R. L., from 2007 Howard St., San Francisco, to Anglo Bldg. (16th and Mission Sts.), San Francisco.

Fellows, Alfred, from Los Angeles to Mesa, Arizona.

Pierce, R. E., from San Jose to Lindsay, Cal.

Clark, Geo. C., from Los Angeles, to Fullerton, Cal.

Lang, J. H., from address unknown to Fullerton, Cal.

Reynolds, Cecil E., from California Club to Title Insurance Bldg., Los Angeles, Cal.

Pottenger, F. M., from Union Trust Co., to Title Insurance Bldg., Los Angeles, Cal.

Lyon, S. B., from 2423 Fillmore St., San Francisco, to 2018 Sutter St., San Francisco.

Flagg, Don P., from 2440 W. 1st St., Los Angeles, to Bradbury Bldg., Los Angeles, Cal.

Bullard, Chas. T., from 644 Fairview Ave., Los Angeles, to 2118 Cambridge St., Los Angeles, Cal.

Cleary, George, from San Diego to Petaluma, Cal.

Butterfield, R. O., from 645 W. 15th St., Los Angeles, to 719 So. Alvarado St., Los Angeles.

Gibson, L. D., from addresses unknown to Eureka, Cal.

Adams, J. M., from Oakland to Centerville, Cal.

Blue, Rupert, from San Francisco to Washington, D. C. Care U. S. & P. H. S.

Domann, A. H., from Los Angeles to 1st National Bank Bldg., Orange, Cal.

Anderson, Chas., from R. F. D. No. 1, Santa Barbara, to Mt. Drive & Palm Ave., Montecito, Cal.

Bishop, Simeon, from 514 7th Ave., to 447 Eddy St., San Francisco.

Jackson, Jas. A., from addresses unknown, back to Scripps Bldg., San Diego.

Ellis, K. E. W., from San Diego to Bakersfield, Cal.

Biggs, E. L., from Trust & Savings Bldg., Los Angeles, to Title Ins. Bldg., Los Angeles.

Rucker, W. C., from San Francisco, to Bureau of Public Health & Marine Hospital Service, Washington, D. C.

Prusch, N. H., from 2344 Sutter St., to Pacific Bldg., San Francisco, Cal.

Hulme, F. W., from Union Sav. Bank Bldg., to Thayer Bldg., Oakland, Cal.

Holbrook, Geo. Story, from 406 Sutter St. to 391 Sutter St., San Francisco.

Hurd, Laura B., from 391 Sutter St., San Francisco, to 209 Post St., San Francisco.

Waterman, Helen J., from 3836 Sacramento St., San Francisco, to 391 Sutter St., San Francisco.

Percival, F. R., from 945 So. Olive St., Los Angeles, to 849 So. Grand, Los Angeles.

Ball, J. D., from Thornhill Road, Oakland, to Central Bank Bldg., Oakland, Cal.

Saunders, B. A., from Bellevue Hotel, San Francisco, to Sutter Hotel, San Francisco.

Loomis, M. L., from Consolidated Realty Bldg., Los Angeles, to California Club, Los Angeles.

Montgomery, H. B. B., from 1635 W. 23rd St., Los Angeles, to ———?

McKibbon, R. E., from Canada (in addresses unknown) to Napa, Cal., care Dr. Doherty.

Tillotson, C. A., from Holtville, Cal., to Coalinga, Cal.

Jennings, Chas. R., Campton, Cal.

Longshore, R. H., National City, Cal.

Keith, J. B., 2458 8th St., San Diego, Cal.

Bush, Alice, from 1243 Grove St., Oakland, to Union Sav. Bank Bldg., Oakland.

Mager, H. A., from 2012 Folsom St., to 931 Fillmore St., San Francisco.

Means, S. W., from addresses unknown to 146 Grant Ave., San Francisco.

Bakewell, Benj., from 1113 State St., Santa Barbara, to 1205 State St., Santa Barbara, Cal.

Miller, T. S., from 690 Market St. to Chronicle Bldg., San Francisco.

Emmal, F. S., from 2689 Howard St., San Francisco, to 391 Sutter St., San Francisco.

Thompson, C. H., from Berkeley to Novato, Cal.

Shields, Lillian, from First National Bank Building, Oakland, to Union Savings Bank Building, Oakland, Cal.

Werner, A. F., from 1155 Broadway to 1225 Broadway, Oakland, Cal.

Richards, J. F., from Bonita Apartments, San Francisco, to 18th and Castro Sts., San Francisco.

Knapp, E. V., from Presidio (General Hospital) to St. Luke's Hospital, San Francisco.

Clark, W. A., from San Leandro, Cal., to Claremont Manor, Oakland.

Purnell, W. W., from 1065 Washington St. to Physicians' Building, Oakland, Cal.

Webster, Geo. M., from Los Angeles, Cal., to Patton, Cal.

Peironnet, F. M., from Los Angeles back to Wilmington, Cal.

Osborne, A. E., from Santa Clara, Cal., to Napa State Hospital, Napa.

Staniford, K. J., from San Leandro to 323 Geary St., S. F.

Thibodeaux, Alex., from 1221 Greenwich St., San Francisco, to 323 Geary St., San Francisco.

Victors, Ernest A., from 323 Geary St. to 275 Post St., San Francisco.

Clark, J. Emmet, from 525 13th St., Oakland, to Thayer Bldg., Oakland.

Boggs, Walter D., from 46 Stevenson St., Pasadena, to 245 Oakland Ave., Pasadena, Cal.

Deckelman, Carlotta, from addresses unknown to 2304 Telegraph Ave., Oakland, Cal.

Byron, A. E., from 14th and Clay Sts., Oakland, to 525 10th St., Oakland, Cal.

Channell, W. L., from Union Savings Bank Bldg., Oakland, to 1028 Washington St., Oakland, Cal.

Cheeney, W. S., from San Francisco to 788 14th St., Oakland, Cal.

NEW MEMBERS.

Hileman, J. E., San Diego, Cal.
Nielsen, J. C. E., San Diego, Cal.
Dawley, L. B., San Diego, Cal.
Verrinder, H. F., Redlands, Cal.
Aldridge, J. W., San Bernardino, Cal.
Landon, G. F. S., San Bernardino, Cal.
McCoy, Wm. E., Pasadena, Cal.
Brem, W. V., Los Angeles, Cal.
Coffman, H. L., Palm Springs, Cal.
Eidenmuller, T. C., San Francisco, Cal.
McNulty, A. H., Hearst Bldg., San Francisco.
Edgecomb, T. J., Shasta, Cal.
Clark, Geo. C., Fullerton, Cal.
Janss, J., Anaheim, Cal.
Lang, J. H., Fullerton, Cal.
Prentice, Geo. L., Garden Grove, Cal.
Wells, Geo. S., Santa Barbara, Cal.
De Ville, Leon, San Diego, Cal.
Jennings, Chas. R., Compton, Cal.
Roberts, J. Margaret, Los Angeles, Cal.
Biggs, E. L., Los Angeles, Cal.
Schroeder, L. A., Los Angeles, Cal.
Flagg, Don P., Los Angeles, Cal.
Boggs, Walter De Witt, Pasadena, Cal.
Smith, H. H., Los Angeles, Cal.
Winn, Albert, San Pedro, Cal.
Gage, C. E., Los Angeles, Cal.
Dale, H. M., Los Angeles, Cal.
Hoyt, H. F., Long Beach, Cal.
Jeffs, Milton D. W., Los Angeles, Cal.
West, F. B., Los Angeles, Cal.
Wagner, F. J., Santa Monica, Cal.
Ward, E. D., Los Angeles, Cal.
Zuber, Augusta, Los Angeles, Cal.
Hicks, J. M., Santa Margarita, Cal.
Merrill, B. E., Santa Paula, Cal.
Mudd, J. L., Merced, Cal.
Dresser, R. O., Paso Robles, Cal.

RESIGNED.

Fellows, Alfred, Mesa, Arizona.

DEATHS.

Clark, Asa, Stockton, Cal.
Hill, Reuben W., Santa Barbara, Cal.
Harker, Geo. A., Mill Valley, Cal.
Gowan, J. S., Fulton, Cal.
McConkey, F. G., San Francisco, Cal.
Webster, L. R., Berkeley, Cal.
Cook, M. M., Durham, Cal.
Scholl, J. T., Los Angeles.

California State Journal of Medicine.

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THE DEL MONTE MEETING.

The Annual Meeting of the State Society, held at Del Monte on the 16th, 17th and 18th of last month, was in every way a distinct success. There was such a large amount of business introduced, and some of the reports and resolutions were received so late—most of them not being turned in until the time of the meeting—that it is impossible to include the full and official report of the Forty-second Annual Meeting in this issue of the JOURNAL. Some of the business matters brought up will be found to be of great importance to our several county societies; other matters were first referred to committees, and these may perhaps have taken some action by the time the next issue is ready for the press.

Throughout the session there was displayed not only keen interest in all matters pertaining to the affairs of the Society and to the business presented, but also a harmony of feeling and a total lack of bitterness or prejudice that speaks strongly for the continuance of improvement in all parts of the State.

The next meeting will be held at Santa Cruz, in April, 1913.

The President is Dr. O. D. Hamlin, of Oakland.

The First Vice-President is Dr. Saxton Pope, of Watsonville.

The Second Vice-President is Dr. Fred. Tebbe, of Siskiyou.

The Secretary is Dr. Philip Mills Jones, of San Francisco.

The full list of the committees elected and appointed will be found, together with the complete transactions of the meeting, in the June JOURNAL.

DOCTOR WILEY.

Through the lifetime of a generation Dr. Harvey W. Wiley has served as Chief of the Bureau of Chemistry in the Department of Agriculture. His recent resignation has caused the press of the country to unite in a wail of protest at his departure from an office which he filled with such conspicuous success. Doubtless, Dr. Wiley long ago proved himself peculiarly fitted for the difficult position he occupied: his stupendous energy, his untiring patience, his unswerving honesty, combined with his scientific knowledge, make his record one without equal in his department. Doubtless, had it not been for his persistence, the Food and Drugs Act of 1906 would have been as innocuous to the manufacturers of adulterated foodstuffs as previous pure food legislation had been.

But Dr. Wiley can be appreciated without joining the chorus of regret at his withdrawal to private life. At sixty-eight years of age a man has a right to husband his energies and concentrate his efforts where they will avail most. Escaping from the routine of office, Dr. Wiley saves time and strength for the work he most desires to do. Released from restrictions placed by inimical officials, he is free to make unbiased judgments, to speak as he thinks, and to act as he deems best. Gifford Pinchot is an excellent example of a man whose influence increased many fold when he left government service to work as an untitled citizen.

In Dr. Wiley's written statement concerning his resignation he says: "I propose to devote the remainder of my life with such ability as I may have at my command and with such opportunity as may arise, to the promotion of the principles of civic righteousness and industrial integrity which underlie the Food and Drugs Act in the hope that it may be administered in the interests of the people at large, instead of that of a comparatively few mercenary manufacturers and dealers."

The future of the man whose purpose is thus stated, will be full of that heroic effort with which he has worked in a not always popular cause. May it be full also of rightful triumph.

The American Medical Association has a newly organized Bureau of Publicity. Where could the Association find a lecturer better qualified to speak on matters pertaining to public welfare? Or where could they find a scientist more widely and favorably known to the public at large? Dr. Wiley has won the regard of the American people by his unselfish efforts in their behalf. Let the American Medical Association give the people an opportunity to learn from the lips of a teacher to whom they are more than ready to listen.

THE RECORD AND WILEY.

In the *Medical Record* for Dec. 9th, 1911 (how acutely appropriate that it should appear in the *Medical Record!*) is a letter from Graham Lusk entitled "The Remsen Board and Dr. Wiley." Lusk is defending the Remsen Board—and incidentally slurring Dr. Wiley in no half-hearted way—for its determina-

tion that benzoate of soda as a preservative in foodstuffs is harmless. Truly, it needs defending. Lusk says that the work of a scientist is usually accomplished in a quiet laboratory and without newspaper "notoriety." Possibly true, but has the question of publicity (we take it that this is what Lusk means by newspaper "notoriety") any relation to the actual value of the results of the investigator? In a generation, no man had so much "notoriety" thrust upon him as had Koch. Was it Koch's fault? Lusk does not like to accept Wiley's dictum about things and says that "It did not seem right that the judgment of a single man should be accepted as final scientific truth." Quite so; the judgment of no single man and no set of men, single or otherwise, will ever be accepted as scientific truth. Scientific truth is such per se. Again he says: "In recognition of this fact the Remsen board was appointed by the government." Ostensibly true but not actually true. The Remsen board was appointed through the influence of the borax trust—and most people, probably including Lusk, know that to be the case. It was appointed to determine that benzoate of soda in foods was not injurious. It so determined. The borax trust—and the manufacturers of foodstuffs made from dirty or rotten raw materials were deeeclighted. Incidentally, Lusk states that two ounces of benzoate of soda administered to a goat weighing 80 pounds, killed the goat. But who wants to be the goat? Lusk's variety of perfectly good "high-brow" science is a delightful thing to have about; but what good does it do the people in the effort to secure pure foods? What did Lusk ever do to help the people to get pure foods or to avoid misbranded, impure or incorrectly labeled drugs? What did Professor Chittenden ever do to help along this cause? What did the late Dr. Christian A. Herter ever do? What did Professor Long ever accomplish in the warfare against the adulterated and impure food manufacturer or the dishonest drug maker? "Much ado about nothing"—but the "interests." Wiley, and the Pure Food and Drug law, stand for just one thing: Honesty. Honesty of material, honesty in preparation—the kind of honesty that does not need benzoate of soda to help it—and honesty in the label. Not much is it? If the stuff they put the benzoate of soda in was good and pure, they would not need to put the benzoate of soda in it, would they? Then why all the talk? The general public may have been "completely and absolutely misled" by Dr. Wiley—but the general public does not think so! And, moreover, we can not but sympathize with Lusk's goat!

KEEP IT IN YOUR OFFICE.

Ye fortunate mortals who have patients sitting in your reception rooms awaiting their turn, why not put some good reading in said reception room for the improvement of the mind of the waiting person? Why not let him read "Nostrums and Quackery," published by the American Medical Association, price fifty cents, with your name stamped on the outside cover? The inside story of many a swindle is told most interestingly; the true facts in regard to quackery that every one hears of and few people know the truth about, is here set forth. Many a physician who has this book in his office has been asked by patients, "May I take this home and read it?" Do something to help your patients educate themselves in how to avoid frauds. Leave the book on the table of your reception room, and then watch how many of your patients will voluntarily come to you and ask questions about the things therein written up, questions showing how eager they are to learn the truth about nostrums, quackery and frauds. Put it in your office and let the printed story do its work; this is one of the very few ways in which we, as a profession, can actually do something to educate the public without arousing their antagonism. You will find no better investment for fifty cents.

PROTECTING A GULLIBLE PUBLIC.

Under this caption the *Pasadena Daily News* has an editorial in its issue for March 22nd that is well worth reading. The News announces its policy in regard to fake and fraudulent "doctor" advertisements. Here is a newspaper the owner of which does not wish to soil his hands with the dirty money—and such "easy money"—of the quack and the charlatan. He seems to be that rare animal, the owner of a newspaper and the possessor of a conscience! To determine just how rare this animal is, one has but to look through the advertisements in almost any newspaper. Speaking of the Seattle tragedy, in which a maddened lumberman who had been robbed and deluded by an advertising doctor named Akey (unfortunately one of the worst type, the licensed physician), shot Dr. Akey and his assistant and then shot himself, the *News* says:

> "Participating in this double crime—that of advertising false healers and the consequent reprisal by an irate victim—is the publisher of every newspaper carrying the nocuous announcements that lure men and women to their physical and financial undoing."

The *News* suggests that reputable physicians insert a simple professional card, stating briefly the specialty, and believes that this would induce most newspapers to throw out the quack advertising. The principal objection to physicians advertising in newspapers is the presence therein of the advertisements of quacks and fakes; and the well known inability of the public to determine the difference merely from an advertisement. If newspapers would publish only the advertisements of reputable physicians and rigidly exclude the other class, and let the public know it, there could be no reasonable objection to this form of advertising. In fact, it is the custom in a good many communities and is not looked upon as at all out of the way. Would that there were more newspapers like the *News!*

HUMOROSITY EVERYWHERE.

Sometimes, even in the dryest and most unpromising circumstances, one may find, if he looks and can see it, a blessed ray of humor that relieves the gloom. For some reason or other, the American Telephone and Telegraph Co. (the Bell System), sent us a copy of their annual report for the year 1911. It is, in more ways than one, an interesting document. The corporation is a dainty little one with only $1,186,639,036 capital stock! The gross revenue collected from the public in 1911 was only $179,500,000 exclusive of the revenue from independent companies. And on that small sum it had to worry along! Speaking of possible government ownership, the report says: "Even if the final conclusion should favor government purchase of all wire plants, there would be no unfavorable consequences to the shareholders of the wire companies other than the obligatory liquidation. Any possible award for the property which the security holders would be obliged to accept would give them better than current prices for their securities." Which means that the government would have to pay more for the shares than they would fetch in the open market; of course!

SOMEWHAT SHADY.

Last April, William F. Boos, L. H. Newburgh and H. K. Marks published an article in the *Archives of Internal Medicine* which purported to be a study of digitalis leaves and their preparations and the variation in strength thereof. The article may or may not have a great deal of intrinsic merit; with that we have nothing to do in this present item. What we object to is this: A short time after the article appeared, the JOURNAL received what appeared to be a typewritten abstract of it, with a typewritten letter giving the impression that the article had been abstracted for this JOURNAL and for the good of the medical profession and humanity. It was, in fact, nothing but a carefully worked up scheme to get "reading notices" into journals that would not print them as such. This JOURNAL printed the abstract in good faith, not realizing that it was a shady scheme to get a reading notice of "digipuratum" into print. When supposedly respectable manufacturers will resort to questionable methods like this in order to gain publicity, what is one to do? Twice in ten years the JOURNAL has thus been "worked" to publish a "reading notice." That is not such a bad record, but we will try and see that it does not happen for at least another ten years. And there are probably better preparations of digitalis leaves than "digipuratum," anyhow.

SOME WHYS.

Quite a number of our readers have asked for information in regard to why we class certain preparations as "nostrums" and deplore the fact that they still receive recognition from certain physicians and are still advertised in certain medical (?) journals. There may be a number of reasons, but two are sufficient as they divide all proprietary preparations (except those approved by the Council, which, of course, are in quite a different case) into two general classes. Firstly, the mixture is in itself worthless or is composed of some simple ingredients and its only claim is the mystery surrounding it. Secondly, the mixture may be, in itself, a good combination of drugs but it has been so extolled, so lied about with intent to deceive physicians into believing that it is much more valuable than it really is, that it is a disgrace to our profession to give it any recognition. To take a few examples that have been mentioned: "H-m-c" tablets are claimed to contain "cactine" and for "cactine" most wonderful claims were made to the effect that it was a powerful heart stimulant and entirely altered the medicinal action of hyocin and morphine when in combination with those potent drugs. The Council on Pharmacy and Chemistry had "cactine" very carefully examined and the most competent experts in the country declared it to be inert. Obviously, then, the manufacturer was claiming for this preparation some qualities that it did not possess; his statements were not in accord with facts. A physician, believing him, might be led into serious error, to the injury of his patient. This is a common fault with a number of nostrums; they claim properties for some ingredient that it does not possess and the physician who uses it is deceived. For another example, take the case of "glycothymoline"; if you want to see a good example of unlimited nerve, just look at the label on one of their bottles and read one of the booklets they issue in the package containing the bottle. It is recommended to alleviate or cure nearly everything from abscesses to whooping cough. The label on the bottle gives a list of conditions for which it is recommended that is only limited in extent by the possible size of the label. For another example, consider peptomangan, and in considering it, go back to the files of the *Journal A. M. A.* and read there the exposure of the fraudulent claims made for this simple iron preparation. Lies, lies, lies. When one observes how easy the game is, one is tempted to believe that physicians really like to be lied to. They certainly are awfully "easy"!

ORIGINAL ARTICLES

TREATMENT OF SEVERE CASES OF DIABETES.*

By EMILE SCHMOLL, M. D., San Francisco.

The mystery which has always shrouded the etiology of glycosuria was supposed to have cleared when it was discovered that sugar is secreted after extirpation of the pancreas. The careful study of this gland which was inspired by Minkowsky's discovery strengthened the theory that diabetes is due to a destruction of the isles of Langerhans, and an etiological treatment seemed to be within our reach. Yet the discovery of the dependence of carbohydrate metabolism upon internal secretion has had remarkably little influence upon the treatment of the disease. Only a few attempts have been made to apply practically the results of experimental research. Mayo, Robson and Cammidge have published a number of cases in which a glycosuria was due to a chronic pancreatitis and surgical treatment resulted in complete recovery in a majority of the cases.

The action of the pancreas on carbohydrate metabolism is evidently due to a substance produced in the gland and carried into the general circulation. Zuelzer believes that he has isolated the pancreatic hormone, which, when injected intravenously, will prevent the glycosuria that follows the giving of adrenalin; and he has even been able to diminish the amount of dextrose excreted in cases of pancreatic diabetes. Unfortunately the latter results are not very conclusive as the injections were frequently followed by chills which obscured the results.

That a purely pancreatic lesion is not the only cause of glycosuria is shown not only by the failure of etiological treatment, but in other ways. Only a minority of the cases that come to autopsy have pancreatic lesions, and even then there is generally great disproportion between the severity of the symptoms and the findings. More hopeful has been the discovery of the relation of the other glands of internal secretion to carbohydrate metabolism. The utilization of carbohydrate is seen now to depend largely upon the balance between the adrenals and the pancreas. The tendency of adrenalin to produce hyperglycemia is held in check by renewed activity on the part of the pancreas. Any disturbance in this balance results in a persistent hyperglycemia, and its natural sequence—glycosuria.

In default of a well-founded etiological treatment, we have to return to the symptomatic control of the disease. The immense amount of work that has been done in the last 20 years upon the metabolism of diabetes has taught us to direct our efforts along the three following lines:

1. Restriction of the abnormally increased total metabolism.
2. Restriction of the glycosuria.
3. Etiologic and symptomatic treatment of the acidosis occurring in severe cases of diabetes.

Before we can grasp intelligently the principles underlying the dietetic treatment of diabetes, we must study carefully the changes in metabolism found in this disease. From the beginning of scientific investigation, the greatest interest has centered about the polyphagia found in most of the severe cases. Not only is there the more or less complete inability to oxidize sugar, but metabolism as a whole seems to be greatly accelerated. In spite, however, of the incredible amounts of food eaten, the diabetic is generally seen to lose in weight. A patient of Troje's took in one day:

297 gm. proteid	1217.7	calories
200 gm. fat	1860.0	"
675 gm. carbohydrates	2767.5	"
	5845.2	"
He excreted 428 gm. glucose	1712.8	"
	4132.4	"

He utilized 4132.4 calories, more than 75 calories per kilo, or nearly twice the normal, yet he was losing in weight. Such cases prove conclusively that with unchecked glycosuria there is a general increase in metabolism. A study of the metabolism in diabetics whose glycosuria has subsided under dietetic treatment shows, however, that their caloric needs do not exceed the normal. Pettenkofer and Voit, using their well-known apparatus for determining the respiratory exchanges, showed that the caloric needs of a diabetic on a fat-proteid diet amounted to 34 calories per kilo of weight, a figure which has since been confirmed fully in numerous cases studied under the same conditions. The work of Ebstein, Magnus-Levy, Weintraud, Laves and above all, the careful and complete studies of the metabolism of diabetes by Benedict and Joslin have established beyond a doubt that the caloric needs of the sugar-free or nearly sugar-free diabetic do not exceed those of a normal man of the same build.

It will thus be seen that the increase of metabolism appears when the glycosuria is unchecked and considerable in amount. These conclusions have been verified through the study of metabolic changes in glycosuria following extirpation of the pancreas. Proteid metabolism is increased from 300% to 500% and the total metabolism from 50% to 80%. A part of the total increase may be ascribed to the pathological proteid metabolism which by its preponderance exerts a specific stimulating action on metabolism as a whole.

This general increase with marked glycosuria must be met by a general restriction of the food to normal caloric values. Such a restriction will often cause a complete disappearance of sugar from the urine when cutting out of carbohydrates, and restriction of proteid failed to lower the glycosuria below a certain point. Attempts have been made along this line since the beginning of scientific research in diabetes, but it remained for Naunyn and his pupils to define a method based on accurate metabolic experiments. Weintraud showed that a very severe case could be kept for a number of months on a diet which did not exceed 25 calories per kilo. Under this treatment, the patient lost his

* Read before the General Section of the San Francisco County Medical Society, January 9, 1912.

glycosuria which before had withstood the absolute withdrawal of carbohydrates, and gained six and one-half kilos in weight.

The most complete form of this restriction is the absolute starvation of the patient. With this in view, Naunyn was the first to show that severe cases, refractory to the usual methods, may be rendered sugar-free by a starvation day. Their tolerance for carbohydrates is markedly increased by this measure which we now employ in the form of vegetable days. The patient receives during 24-48 hours nothing but green vegetables and black coffee which mitigate the pangs of hunger.

This restriction of diet can never be the first step in the treatment of glycosuria. The polyphagia and polyuria incident to the severe type of the disease do not permit such a reduction until the excretion of sugar has been brought within bounds. Withdrawal of the carbohydrates and restriction of the proteid generally reduces the sugar excretion to 20 to 30 gm. a day—usually about 1% or 1½%. Further lessening of the glycosuria may be obtained only by the most rigid dietary curtailment, to which the patient will not submit for any length of time. Hence the results secured in sanatoria are rarely lasting unless carbohydrate tolerance is increased by the *quantitative* restriction of diet. This greater tolerance enables us to give the patient enough proteid and starch to keep him contented and to make life worth living for a much longer period than would the severe *qualitative* restriction alone.

This method has received fresh justification through the work of Chittenden and his collaborators. They showed that a nitrogenous balance can be maintained with a diet considerably below the previously accepted standards. Chittenden himself lived on a diet containing about 5.7 gm. of nitrogen, corresponding to about 40 gm. of proteid. The caloric value was 2000, or about 35 calories per kilo. Football players were kept upon a similar caloric supply with 50 to 70 gms. of proteid.

The main object of the dietetic treatment of diabetes has always been the reduction of glycosuria and this depends, except in the very rare cases of renal diabetes, upon a diminution in the glycemia, or sugar-content of the blood. The intensity of glycosuria depends mainly upon the hyperglycemia. Under ordinary conditions, the concentration of glucose in the blood is regulated by two factors—the changing of glycogen to sugar and the oxidation of this sugar in the tissues. Both factors are disturbed in diabetes. We know by actual measurement that glycogen formation is diminished according to the severity of the diabetes. We know also that the tissues are less able to oxidize sugar since, in the majority of cases, exercise does not influence the intensity of the glycosuria.

Therapeutically we can influence only the *formation* of sugar, so we must first review the sources, or different elements in the food from which sugar may be derived.

The simplest relation between food and glycemia is shown by the carbohydrates. We must keep in mind the fact that the food stuffs are not oxidized in the body as coal is burned in a grate. Even pure dextrose cannot be utilized until it has become part of the organism; that is, it must be built into the liver as glycogen. From this it will be seen what an insuperable barrier the almost complete absence of glycogen formation in the severe diabetic raises against his use of carbohydrates.

Next in importance comes the relation of proteid to glycemia. In severe cases of diabetes, after the exclusion of carbohydrates from the diet, the excretion of sugar varies with the amount of proteid given. With an increase in the amount of proteid in the food, sugar excretion goes up, while a reduction of proteid may lead to a disappearance of sugar.

The explanation for this phenomenon has been found in Emil Fischer's remarkable studies into the structure of the proteid molecule. Most of the proteids contain ½% to 3% of preformed carbohydrate in the form of glucosamin, but this amount is altogether too small to account for the tremendous glucose excretion seen after proteid feeding. Besides, animal experiments have shown that glucosamin is not changed into glucogen.

A number of the aminoacids constantly obtained in the cleavage of the proteid molecule have been transformed into carbohydrates. Alanin, after the loss of its amino molecule, can be stored up as glycogen, and will increase the glycosuria if fed to diabetic dogs. By an ingenious application of the well-known fact that glycocoll and benzoic acid combine in the body to be excreted as hippuric acid, Mohr was able to show that glycocoll may be transformed into glucose. After feeding benzoic acid to diabetic dogs, he found that the diminution in sugar excreted corresponded to the amount of glycocoll bound and removed from the sphere of metabolism. In similar ways was proven the transformation of asparagin and leucin into glucose.

The amount of glucose that can be formed from proteid has been the subject of extensive discussion and research. Minkowski found in experimental diabetes that under different forms of nutrition 2.8 gm. of glucose would appear in the urine for every gram of nitrogen in the food. Granting that no glucose is oxidized in pancreatic diabetes, he concluded that the 2.8 gm. of sugar was being formed from this 1 gm. of nitrogen, or its equivalent, 6.25 gm. of proteid. A number of cases of human as well as experimental diabetes have since been published in which the relation of glucose to nitrogen was considerably higher.

The maximum amount of glucose that may be formed from proteid must be determined in another way, that is, through a comparison of the calory values of the two. We know that the proteid molecule is not oxidized as such, but is first broken up, very much as it is in digestion, into two main divisions: one a nitrogenous, more or less inert nucleus, and the other an oxidizable, energy-producing body. Since 1 gm. out of 6.25 gm. of proteid consists of nitrogen, the remaining energy-

producing body must weigh about 5 gm. If this body were of carbohydrate nature it would produce about 20 calories; so when Rubner found that the 6.25 gm. proteid actually produced 18.6 calories on oxidation, he concluded that the oxidizable part probably was of carbohydrate nature. As far as I can see, this theory has been generally accepted; and since we have no reason to assume that oxidation in the diabetic is different from that in the normal, 5 gm. of glucose excreted should correspond to 1 gm. of nitrogen taken in, or, by an easy calculation, 81.9 gm. of glucose correspond to 100 gm. of proteid. In other words, a diabetic can excrete only 82 gm. of sugar for 100 gms. of proteid destroyed. If we find a higher proportion than this, we must assume that glucose has been formed at the expense of fat.

The experimental study of the relation of fat to glycosuria has not produced any striking results. As a general rule, the amount of fat in the diabetic diet does not seem to have any influence on the glycosuria so long as the proteid metabolism is not secondarily affected. We know of but few cases where the glycosuria varied with the amount of fat given. Glycerine, a constituent of fats, may be changed into glucose and when fed to diabetics increases glycosuria. Since, however, it forms but 2½% of the fat, it cannot play an important role.

The explanation for this transformation of fat into carbohydrate must be sought elsewhere. We now recognize the proteid molecule as a complex of amino-acids clustered about a nitrogenous nucleus, and it has been shown that this nucleus, after having been robbed of some of its acids, may later, under more favorable conditions, recover them from new sources. For instance, benzoic acid robs the tissue proteids of their glycocoll which must be taken on again from the circulating blood. Thus it is conceivable that the fatty acids may be changed not necessarily into carbohydrate, but into the amino-acids needed for proteid repair and, as we have seen, these contribute to the sugar in the urine.

The prognosis of diabetes depends mainly upon the degree of acidosis since this is an index of the inability of the body to oxidize sugar. We all know that severe cases are characterized by the presence of acetone, diacetic and oxy-butyric acids in the urine, and a corresponding increase in the amount of ammonia.

These substances may be made to appear in considerable quantities in the urine of normal men by the complete withdrawal of carbohydrates, and they disappear promptly with the return of carbohydrates to the diet. The different pathological conditions in which they appear are also characterized by a deprivation of carbohydrate. The amounts of the acetone bodies are not so large, however, in these conditions since there is always enough proteid sugar being oxidized to take care of some of the acid formed. As Rosenfeld has so aptly said, these bodies are burned up in the fire of the carbohydrates. Oxybutyric acid is oxidized if fed to animals under normal conditions, but it is excreted in the urine if the animal is kept on a carbohydrate-free diet.

The work of Baer and Blum has thrown great light on the formation of these bodies. It has long been assumed that they were formed from fat, and Magnus Levy thought that proteid as well as fat yielded oxybutyric acid. We now know that any of the straight fatty acids may form these bodies provided that they contain four or a higher *even* number of carbon atoms. The ramified fatty acids must have a straight chain of at least four carbon atoms or no diacetic acid can be formed. These bodies can be derived also from the amino-acids, but here the number of carbon atoms must be *uneven.*

Any attempt to explain the oxidizing effect of the carbohydrates upon the acetone bodies would carry us too far from the subject. The practical points in the treatment of acidosis will be taken up later.

TREATMENT.

The successful treatment of diabetes depends upon the intelligent application of the chemical facts which we have briefly reviewed. An improvement in the patient's condition can be obtained only by increasing the tolerance for carbohydrates, and this is done along the lines laid down by Hoffmann: that the efficiency of a diseased function may be raised by rest. Untreated cases show a tendency to continual loss of tolerance, but those which at the beginning could not stand any carbohydrate at all without glycosuria, may, after treatment, utilize 50 to 100 gm. without the appearance of sugar in the urine.

The keynote of the dietetic treatment is not the qualitative but the quantitative restriction. It is not sufficient to give the patient a diet-list of foods allowed and forbidden because every case has a different amount of tolerance to carbohydrate and to proteid. There are also those remarkable cases in which the true carbohydrate is tolerated better than that formed in the destruction of proteid, so that while they may be allowed a considerable amount of carbohydrate food without an increase in sugar excretion, they cannot stand any excess of proteid.

The first step in the treatment must therefore be a determination of the tolerance to these two food-stuffs. In practice, we put the patient on a diet containing 100 to 120 gm. proteid and then we cut down the amount of carbohydrate from day to day. If the patient becomes sugar-free on a simple restriction of carbohydrate, his case will be easy to handle and the prognosis is good.

It is wrong to interdict all carbohydrate food in every case simply because the patient is a diabetic. There is a certain limit of tolerance in every case and this must be determined at the outset. When it is desired during the study of the case to give a strictly carbohydrate-free diet, great care should be taken and the change had better be gradual—extending over a few days. The reason is that there is very often an alarming rise in the acidosis at this time, and the amount of urinary ammonia and the intensity of the ferric chloride reaction for diacetic acid should be watched from day to day.

Some diabetics seem to react a little differently

to different carbohydrates. For instance, it is known that levulose will occasionally be oxidized so completely that it will not affect the glycosuria, but in the majority of cases it is changed to dextrose and excreted as such. Lactose is also oxidized by some diabetics while in others the influence of carbohydrate tolerance is so pernicious that milk has to be strictly forbidden.

If the patient does not lose his sugar under simple restriction of carbohydrate, he proclaims his inability to take care of the proteid sugar, and this item must now be reduced to the lowest limits —60 to 70 gm. daily. These cases are somewhat paradoxical in that they will oxidize a good deal of carbohydrate after the proteid is cut down.

It is a good rule, even in the lighter cases, to keep the proteid as low as possible, because this has a tendency always to increase carbohydrate tolerance. Conversely, it is a grave mistake to give any diabetic large amounts of meats and eggs, because they are bound to do harm. When we want to increase the calory content of the diet, it is fat that we must add, and we may use it freely, since we have seen that it rarely has any influence upon the disease. It is now our mainstay in supplying the caloric needs of the diabetic, and the realization of this point has contributed very largely to the recent advances made in the handling of diabetes and to the more hopeful prognosis which we can now give.

There are cases which do not become sugar-free even after careful attention to all the points suggested above, and in these cases there must be a reduction in the total amount of metabolism. In the theoretical discussion at the beginning of this paper it was shown that one of the salient features in diabetes is this general increase in metabolism, and it must be met by a corresponding retrenchment. It is in these cases that we must use the vegetable days of Naunyn, which are really starvation days, since only some 300 calories are given with a proteid content of 5 to 10 gm.

Two thousand two hundred to two thousand five hundred calories is generally sufficient to keep the patient from losing in weight and strength. Some loss of weight at the beginning is often unavoidable, especially when the patient has been overfed for some time, but a balance should be obtained as soon as possible. Even the obese diabetics should not be reduced, as none of these patients stand loss of weight well and when it occurs they often develop an alarming acidosis. There is very little trouble in maintaining the weight after the patient is sugar-free, because under these conditions a diabetic shows a decided tendency to hold his own.

When, after a week or two of careful treatment along the lines laid out above, the patient will show traces of sugar, it is generally better to rest satisfied for a while rather than to forge ahead and run the risks of acidosis and lowered nutrition. The improvement up to this point will stop the progressive tendency of the disease and with increased tolerance these traces may disappear of themselves.

Anyone can see that we cannot safely or intelligently pursue such strenuous treatment unless we know the caloric value and proteid and carbohydrate content of the diets which we vary from day to day. A record has been worked out in my laboratory by Dr. Alvarez, which shows very conveniently the different data from which the progress of the case can be judged. All these facts are later charted together in another table so that the characteristics of the patient and his therapeutic points of attack can be seen in a moment.

In calculating the value of a diabetic's diet, we must not forget the loss sustained through the excretion of glucose and, in severe cases, oxybutyric acid. If the patient is excreting 100 gms. of glucose, we must subtract 400 calories from his total, since he obtained no benefit from what was not burned in his body.

Thus far our therapeutic measures are seen to follow very closely along the lines laid down in the laboratory, but we must now enter the realm of empirics.

For a long time it has been known that good results could be secured in some severe cases of diabetes by feeding large amounts of carbohydrate in one single form. Thus, older writers have advocated the giving of cane-sugar; Düring proposed an exclusively rice diet; Mossé had his "Potato Cure," and finally v. Noorden discovered the "Oatmeal Cure." He found that patients who had failed to lose their glycosuria entirely under the strictest dietary might become sugar-free on a diet containing 250 gm. of oatmeal, and after two or three days a return to their former diet, would show a great increase in tolerance.

This discovery has been amply confirmed and gives us a new way of handling the dangerous cases in which the acidosis becomes more and more menacing. As we have seen above, this is due to the almost complete absence of carbohydrate oxidation; and with the burning of the oatmeal starch, there is a prompt and decided diminution in the acidosis. The oatmeal diet must be used intelligently, however, if results are to be secured. It must be preceded by at least two vegetable days, as described above, so that the blood may be cleared of the sugar excess and the oatmeal can have a fair start.

On oatmeal days, 250 gm. of oatmeal is given as gruel in which 300 gm. of butter is incorporated. No other carbohydrate may be given in even minimal quantities, or failure will result; the glycosuria will rise and tolerance will fail. Sometimes some vegetable or egg proteid may be given with the oatmeal, but of late I have obtained better and more constant results by omitting all proteid. Meat proteid is out of the question, as it increases the glycosuria and prevents the action of an *exclusively* oatmeal diet. After two or three days of oatmeal diet it is well to have one or two vegetable days before returning to standard diet.

The oatmeal diet may frequently fail for one or more of the following reasons: First—It causes acute intestinal disturbance which may even bring on coma in a severe case; Second—It will increase the glycosuria in some cases; and Third—It may cause acute fluid retention in the body, the so-

called "oatmeal edema." This complication may be avoided by giving theocin at the same time.

The success of the oatmeal diet has been one of the greatest puzzles in diabetes. The theory has been advanced that oatmeal starch has a distinctive composition which allows of its absorption in a way different from other carbohydrates. Another suggestion is that oatmeal contains some substance which favors carbohydrate oxidation either through stimulation of internal secretion or through an action like that of glutaric acid.

Magnus Levy obtained experimental evidence that oatmeal starch is changed in the intestinal canal into substances which, though unsuited to glucose formation, retain their carbohydrate characteristics sufficiently to insure the oxidation of the acetone bodies.

The explanation advanced by Blum, however, seems to carry most weight at present. He sees in all these facts the workings of one general law, namely: that the diabetic can oxidize carbohydrates provided that they are not given with proteid.

If this be true, the carbohydrate cure would work in every case and the improvement should be dependent upon the care with which proteid is excluded. Blum showed that the same good results could be obtained in practically all but the most severe cases in which the carbohydrates pass through the body untouched, even in the absence of all proteid.

ACIDOSIS

The treatment of acidosis depends almost entirely upon securing greater carbohydrate tolerance. In fact, if we can increase the tolerance to the point where 50 to 100 gm. carbohydrate will be oxidized, the ferric chloride reaction will disappear and the danger of coma will be averted. If acidosis is threatening from the beginning, sufficient alkali must be given to make the 24-hour urine alkaline. Since coma is due to an acid intoxication, nothing short of complete neutralization will suffice. I often see diabetics who are getting only 5 to 10 gm. of sodium bicarbonate a day when they should be getting 60 to 80 gm. One of my cases, a girl of 9, took 60 gm. a day for 15 months, when an acute intestinal attack brought on the fatal coma. The prognosis becomes hopeless when such doses fail to neutralize the urine because the disease has progressed so far that we cannot expect to secure any increase in tolerance.

In my experience, the treatment of coma is hopeless and I have never saved a case. At the beginning of somnolence, an energetic oatmeal cure will sometimes stem the tide, but even then the stomach soon rebels against the bicarbonate and the monotony of the oatmeal. In such cases a straight milk diet may also put off the evil day, but generally not for any great length of time.

The following brief extracts from actual cases will show how remarkably the carbohydrate tolerance may be developed—often in a short time:

Mr. B. Is a light case of diabetes, and became sugar-free on the third day of treatment. On the first day he excreted 30 gms. of glucose with an intake of 186 gm. By the ninth day his tolerance had increased so that he was sugar free with an intake of 116 gm. of carbohydrate.

Mr. S. Was apparently a case of moderate severity. Symptoms of his disease appeared only a few months ago and he has since lost about 15 pounds.

On a freely chosen diet he excreted 136 gm. sugar in 2000 c. c. of urine, or 6.8%. On a carbohydrate-free diet this fell to 32 gm. in 1400 c. c., or 2.3%. He promptly developed a marked acidosis with large amount of diacetic acid. With this diet his sugar excretion finally fell to 10 gm. a day, but the acidosis became so threatening that he was put on an oatmeal diet after a preliminary vegetable day, which sent the sugar excretion up to 17 gm. The oatmeal had to be stopped on account of gastro-intestinal disturbances after it had sent the sugar up to 52 gm., or 2½%. The next day on vegetable diet excretion was 25 gm. He was again put on the proteid-fat diet with the addition of 20 gm. oatmeal and 60 gm. bread on account of the increasing acidosis. Ammonia excretion rose to 2.7 gm., and 30 gm. of sodium bicarbonate was not enough to keep the urine neutral.

On account of this acidosis, the oatmeal diet was tried again for three days. On the first there was no sugar; on the second 24 gm., and on the third 33 gm. The ammonia excretion dropped to .75 gm. the first day. On the first day of return to the former fat-proteid diet, the sugar excretion was 4.6 gm., showing a marked increase of tolerance.

Since then the urine has been sugar free; the ammonia has decreased to .4 gm., and the acidosis has disappeared. At present he gets 13.1 gm. nitrogen, or 82 gm. proteid; 118.7 gm. fat, 113.2 gm. carbohydrate, of which 60 gm. is bread and 30 gm. is oatmeal.

SOME CASES SUCCESSFUL AND OTHERWISE, BEING A REPORT OF TWO CASES, SINUS THROMBOSIS AND A CASE OF RETROPHARYNGEAL ABSCESS.*

By D. H. TROWBRIDGE, M. D., Fresno.

I think the tendency, sometimes, is to report only our successful cases, leading the public to believe that we are always successful in our work. But there is even more sometimes to be learned, I think, in the report and study of our unsuccessful cases, than in the ones that always turn out nicely. Then, again, we are not so apt to report the cases that end badly, as the ones which terminate well.

In the cases which follow, I have reported some which have been very interesting to me, although ending fatally, and some others which were equally interesting which terminated successfully.

Sinus thrombosis is a rare disease. One may not see a case in several years, yet within the last year I have had two cases under my care.

Case No. 1. A male, age about thirty years,

*Read before the San Joaquin Valley Medical Society March 12, 1912.

laborer, previous health good, was brought to me by Dr. Tracey Melvin of Porterville on April 4th, 1911. The history of the case as reported by Dr. Melvin was that about one month before the patient had suffered from suppuration of the right middle ear. The case had run a normal course until about a week previous when there had been considerable vomiting without any special cause. This had made Dr. Melvin suspicious of some cerebral complications and it was on account of this that the case was brought to the Burnett Sanitarium. Dr. Melvin accompanied the man and we examined him thoroughly. The patient, on admission, presented the following condition: temperature 100°, pulse from 72 to 76, respiration 18 to 20. There was no swelling or tenderness over the mastoid. There was a slight discharge from the ear. The patient being very deaf before the infection, nothing could be determined from this symptom. After the examination with Dr. Melvin, we concluded that there were not sufficient symptoms to warrant an operation and it was decided to await developments. The condition above reported continued for about a week when the temperature rose to 104.5°. There was no vomiting and no swelling or tenderness over the mastoid, nor was there any stiffness or swelling of the neck over the internal juglar—in fact there were really no symptoms to indicate that there was any infection of the mastoid or the surrounding tissue, aside from the temperature—the discharge from the ear having practically ceased. Drs. Maupin and Craycroft also saw the case and examined him with me from time to time, and decided that a mastoid operation was not indicated. However, on April 8th he was taken to the operating room, and assisted by Drs. G. L. Long and J. L. Maupin, I opened the mastoid thoroughly, finding the cells perfectly normal, there being no infection with the exception of the mastoid antrum which contained some little granulations and a few drops of pus. After the mastoid operation his condition was very much improved for several days, his temperature not going above 101°, until the tenth day of his illness when his temperature rose to 104° and from that time on varied between normal and 101°, occasionally rising to 104° and 105°. There were no chills, however, and no sub-normal temperature at any time, and really nothing to indicate that there was any lateral sinus infection, although I was suspicious that there was and kept looking for symptoms of the same. On the 13th day of his illness he had a decided chill, being the first symptom of lateral sinus complication, aside from the fact that he had developed a metastatic abscess in the right knee which was opened and drained by Dr. Maupin. These two symptoms made me very suspicious of lateral sinus thrombosis. On the 14th day of his illness Dr. Jas. A. Black of San Francisco saw the patient in consultation. At that time I discussed with Dr. Black my suspicions of lateral sinus infection, but we both could but admit, that his condition, from an examination at the time and from his past history, did not warrant an operation for lateral sinus infection. At this date a leucocyte count was made showing leucocytosis of 17,400. During all of this time his temperature rarely went above 102°, his pulse was between 80 and 100, respiration 20. He did not sleep well at night, but slept better during the day, and talked a great deal in a rambling fashion, showing some meningeal complication. The mastoid wound at that time had not healed and did not look healthy, although there was very little secretion of pus from it.

On April 29th I examined the fundus and found an optic neuritis with choked disks in both eyes. Relying on this symptom of brain pressure, in addition to the other symptoms, I decided to explore the lateral sinus, which I did on the afternoon of the 30th, Drs. Maupin and Craycroft assisting. I opened the lateral sinus and found it full of broken down clot and pus. The lateral sinus was thoroughly uncovered, then the internal jugular vein was resected to the superior border of the clavicle and a drainage tube inserted and the wound in the neck closed. I then returned to the lateral sinus removing a grove in the skull back probably three or three and one-half inches from the ear over the lateral sinus, curetting the sinus out thoroughly as I progressed backward, until I secured a free flow of healthy blood. The wound was then packed and the patient was put to bed. His temperature after the operation ranged from normal to 102° for several weeks and his general condition improved considerably. The wound, however, did not appear exactly healthy, granulations did not form, and although his general condition was better, his mind did not become clear. A metastatic abscess formed in the other knee, and later on a large one formed in the region of the right shoulder which contained at least a quart of pus. These were opened by Dr. Maupin. It was remarkable how quickly these abscesses formed and it is also remarkable that they never healed. Eventually, the mastoid wound completely healed and as far as the result of the lateral sinus operation was concerned, it was successful, but there was evidently more or less meningitis established before the operation was performed which never cleared up, and this, together with his pyemic condition finally resulted in his death on July 21st. This patient lived two months after the operation on the lateral sinus. We were unable to obtain an autopsy.

Case No. 2. On October 2nd, 1911, a child four years old was referred to me by Dr. Wm. P. Byron of Lemoore. The child on entering the Burnett Sanitarium had a temperature of 100°. The history of this case was that the child had suffered with tonsillitis followed by suppuration of the right middle ear. This suppuration had ceased and was considered cured. Soon after entering the sanitarium the child had a chill and the temperature promptly rose to 105.6°, but on the afternoon of the second day the temperature was down to 97°. Another chill occurred on the evening of the third day and the temperature at 10 p. m. was 105°. On the morning of the fourth day the temperature was 96.4°, and at 3 p. m., following another chill, the temperature was again 105°. On the fourth day Dr. Grace Hopkins made a blood count which showed a leucocyte count of 16,000. Drs. Maupin and Cowan examined the child with me on this date, and we made a diagnosis of lateral sinus thrombosis, and with the parent's permission, and with Drs. Maupin and Cowan assisting, I operated on the child on the evening of the fourth.

I opened the mastoid cells, thoroughly cleaning out the mastoid bone, and found a few drops of pus in the mastoid antrum, otherwise it was in a healthy condition, there being no granulations or pus outside the antrum itself. I then thoroughly exposed the lateral sinus for about one inch before exploring it. On opening it found it full of broken down blood clot and pus. This confirming the diagnosis of sinus thrombosis, I merely covered the mastoid wound with gauze and proceeded to remove the internal jugular vein which was collapsed but did not contain any clot. I removed the internal jugular except the upper end, which I sutured to the external wound, after the method of Balance, this acting as a drainage tube for the jugular bulb. I then returned to the lateral sinus and proceeded backward for two or two and one-half inches back of the ear, removing the skull until healthy sinus was reached and a free flow of healthy venous blood established. The wound was then closed, with the exception of the mastoid wound, which was packed with iodoform gauze, bandage was applied and the patient put to bed. With the

exception of a rise in temperature on the 9th, 13th, 16th and 18th inst., all of which was evidently due to the intestinal tract, the child made an uneventful recovery. The wound healed perfectly from the start and there were no complications to worry us, except the rise in temperature mentioned, which quickly disappeared on cleaning out the bowels each time.

I wish to call your attention particularly to two points in the cases just quoted. In the first case the symptoms were absolutely masked and we were kept guessing all of the time. There was never at any time any symptom which pointed to lateral sinus infection and this is why the patient died, when an earlier operation would probably have saved him. The second case was typical—that is—chills and high temperature, 105° and 106° followed by a drop of temperature to subnormal. There were no sweats in this case as sweats do not come until later. I think these symptoms are almost pathognomonic of lateral sinus infection, and were all cases as plain as case No. 2, it would be very easy to make a diagnosis, and a diagnosis being made early, in skillful hands, our percentage of recovery would be almost one hundred. However, I wish to report another case which shows how almost impossible it is to be sure of our diagnosis before exploring.

Case No. 3. J. C., age about eight years, came to me about the middle of October, 1911, suffering from suppuration of the ear. It is sufficient to say that the case improved but did not get entirely well and continued to discharge pus. I treated the case from time to time and the rest of the treatment was carried out at home. Eventually I lost sight of the case until on December 8th, when I was called by Dr. Doyle to see the boy again, Dr. Doyle having been called on account of the boy being sick with fever. I again suspected that his temperature was due to his ear. On December 9th he had a chill followed by temperature of 104°, the temperature going to sub-normal afterwards. At noon on December 10th the temperature was again 104° and at 11 p. m. it was 97.4°. At 4 a. m. the next morning it was 104.4°, and subnormal at 1 p. m. the same day, being only 97°. It was decided to operate and we did so on the 11th inst. Dr. Hayden gave the anesthetic and Dr. Doyle assisted. Inasmuch as this case was so much like case No. 2, we were very much afraid of lateral sinus infection. I opened the mastoid and found it rather soft throughout with pus in the mastoid antrum; however it was not what one would call a bad case, rather it could come under the classification of mild. I explored the lateral sinus for a distance of about one inch. It looked healthy, but on account of the symptoms—chills and sub-normal temperature—we thought it quite necessary to open it, which I did. But on penetrating the sinus a jet of pure healthy blood came out, showing that the sinus must be perfectly healthy. (Although one must be sure that it is not partially clotted.) Feeling sure that the sinus was perfectly healthy after opening it, I merely put pressure on it to close it and dressed the wound in the usual manner, and the boy made a perfectly uninterrupted recovery.

This third case, I think illustrates how hard it is sometimes to make the diagnosis of lateral sinus infection certain, but it also conclusively points to the fact that it is better to explore the sinus and find it healthy, than it is to wait and not explore when it is possible that there is a diseased condition in it. I think there is but little danger in opening the lateral sinus for exploration.

Case of retro-pharyngeal abscess. On January 10th I was called to Fowler in consultation with Dr. Morrison to see an infant four months old. This infant had been perfectly healthy until a few days previous, when he seemed to suffer from a severe cold. The real difficulty when I saw the case was that he had a labored breathing which was very peculiar, as he would take two or three full, free respirations, and then for a minute he would seem to have some obstruction of the larynx. On inspection, nothing abnormal was seen in the throat—no sign of tonsillitis, diphtheria or anything abnormal, unless the membrane of the pharynx might have been slightly redder than normal. A nurse was secured and the baby was put on expectant treatment. Again on the 15th inst. I saw the child with Dr. Morrison and Dr. Cowan, at which time no further progress was made in the diagnosis except that we found by holding the jaw upward and outward, as we often do in giving an anesthetic, that the child was able to breathe perfectly free. The inspection of the pharynx at this time showed nothing abnormal. The nurse was instructed to hold the chin forward and the child was put on sodium benzoate at the suggestion of Dr. Cowan. There was no improvement in the child and I saw him again on the 21st. At this time I noticed a slight bulging of the pharynx and on palpation with the finger a distinct bogginess was found. I then made a diagnosis of retro-pharyngeal abscess, and advised that the patient be brought to the Burnett Sanitarium the next morning. The patient was brought in the next day and assisted by Drs. Morrison and Cowan I opened the abscess. The patient was held with the head down and the body elevated at about forty-five degrees. There was at least an ounce of pus gushed out when the incision was made in the abscess. I made a free incision and the patient was relieved immediately and the breathing became perfectly normal. I had the baby put to bed, still with the body elevated, and instructed the nurse not to let the child nurse the breast for a few hours. However, the baby began to fret in about an hour, and the nurse thinking that it would relieve it to let it nurse, allowed the mother to take it up to the breast. The baby immediately became cyanotic and died.

Death in this case must have been due to the fact that there was an accumulated clot in the pharynx and when the child was raised to an erect position, the clot dropped into the larynx and immediately smothered the child.

The lesson to be learned from this case is that after evacuating the abscess, the patient should be kept with the head down and it should not be raised until after the physician has thoroughly cleaned out the pharynx by direct illumination and removed all clots or any accumulation that might be in the pharynx. In fact, I think it would be safer if the patient were not raised to an erect position for twenty-four or forty-eight hours, and then only after the pharynx was cleansed out, and furthermore, a tracheotomy outfit should be ready at hand, as the patient may be asphyxiated very quickly, and one will sit by helpless.

THE BLOOD PRESSURE IN PNEUMONIA.

By F. F. GUNDRUM, M. D., and E. E. JOHNSON, M. D., Sacramento.

In spite of the many and great advances in our understanding of the biochemistry of infectious diseases and the marked improvements in the clinical results obtained in some infections by the use of appropriate sera and vaccines, the treatment of

inflammatory lesions of the lungs is still largely symptomatic and supporting, no specific therapy being as yet available in combating this group of diseases. The toxemia of pneumonia so frequently gives evidence of its gravity by disturbances of the circulation, that for many years close attention has been paid by clinicians to the heart and pulse as giving a better means of prognosis than the actual amount of lung tissue affected by the inflammatory process. When the clinical use of apparatus for recording blood pressure became general a very considerable number of reports concerning the pressure in pneumonia appeared. There has been no striking agreement in the findings of the various observers. Potain [1] reports a normal pressure; Cook and Briggs [1] and Gilbert and Castaiga, [1] hypertension; Frankel, hypotension in two-thirds of the cases; Zadek, [1] Christeller [1] and Ekgren [1] record a sharp fall in the blood pressure at the time of the crisis; Norris [1] found no constant changes in pressure and no critical fall; Gibson [2] of Edinburgh computed the ratio existing between the blood pressure and the pulse. He came to the following conclusion: "When the arterial pressure expressed in millimeters of mercury does not fall below the pulse rate expressed in beats per minute, the fact may be taken as of excellent augury, while the converse is equally true. That is, when the pulse rate per minute is higher than the pressure of millimeters of mercury, the equilibrium of the circulation is seriously disturbed." C. A. Gordon [2] has come to a similar conclusion. At the sixty-second annual session of the American Medical Association, a paper was read by Lambert [3] in which he reported the result of a series of observations made on forty-eight cases of pneumonia in Bellevue Hospital, New York. He found that "in patients who were non-alcoholic, even among those who had passed the resistant stage of youth, Gibson's rule seemed to hold particularly true." Patients with arteriosclerosis or chronic nephritis did not conform so noticeably to this rule.

During the months of December and January past, we studied a series of thirty consecutive patients admitted to the Sacramento County Hospital with pneumonia, having especially in mind the blood pressure-pulse ratio spoken of by Gibson. The outcome proved so suggestive that we were encouraged to report it, realizing, however, that thirty cases are not many from which to draw elaborate conclusions. All blood pressure readings were made with an ordinary mercury manometer of the Riva-Rocci type or with a spring manometer which was frequently compared to the mercury column. The blood pressure and the pulse, taken simultaneously, were recorded daily or oftener if any marked change in the patient's clinical condition was noted; the fraction $\frac{B}{P}\frac{P}{}$ which we called, for the sake of convenience in reference, Gibson's quotient, was also written on the chart. Of the thirty cases twenty-six were lobar in type, four broncho-pneumonic. The patients were all adult males from eighteen to sixty years of age. Twenty were alcoholics; ten denied alcoholic history. The termination in ten cases was by crisis; in eleven by lysis, and in nine by death. The mortality (30%) is high but not remarkable for a public institution where all of the patients are of the "less fortunate." We found very great variations in blood pressure on admission (65 to 122) and of pulse as well (68 to 148). The $\frac{B}{P}\frac{P}{}$ quotient on admission was one or more than one in eighteen cases and less than one in twelve. Of the eighteen cases showing a quotient of one or more than one upon admission, seventeen (94%) recovered and one (6%) died. Of the twelve patients whose quotient was less than one, three (25%) recovered and nine (75%) died. The findings on the day after admission were much more suggestive. Twenty-one patients showed a quotient of one or higher and nine lower than one, which figures correspond exactly with the death rate. The correspondence is not so exact, however, as these figures would indicate, for of the twenty-one who had one or plus one fraction on the second day, twenty (96%) recovered and one (4%) died, while of the nine whose fraction was less than one, one (12%) recovered and eight (88%) died. During the treatment of these cases we made observations at first merely as a matter of interest and for comparison with other clinical signs, but later we came to attach a very considerable importance to Gibson's quotient as a means of guiding us in regard to necessity for and the amount of cardio-vascular stimulation. Several cases whose quotients began to drop down were apparently greatly helped by increase or change in medication.

The drug therapy was not elaborate. A patient who was admitted in good condition with a quotient of one or over was given the ward cough mixture at regular intervals and watched until some indication of cardio-vascular disturbance presented itself. Two patients needed no other drug. Nearly always, however, in the class of cases received at the County Hospital, some form of stimulation was needed and we used moderate doses of strychnia by mouth as long as the quotient could be maintained at one or more. If more stimulation was required, we added caffeine in four grain doses especially if the heart muscle seemed to be inefficient. The majority of the favorable cases received no other drug. The unfavorable cases were given, in addition, adrenalin hypodermatically when the low pressure was apparently due to peripheral dilation and digitalin and camphor when cardiac weakness developed. We have placed most reliance on the strychnia and caffeine with occasional doses of adrenalin for times of especial danger, possibly because we used this combination first and on favorable cases. The nephritics with high blood pressure and arterio-sclerotics who have ordinarily a plus pressure proved exceptions to the rule. It does not seem impossible to us that, perhaps, if, we could have had a few blood pressure-pulse readings before the illness began and so have obtained a modified quotient at a different level

than normal, this discrepancy might have been absent. Infants and young children with pneumonia are marked exceptions having frequently pulses of 110 to 130 with blood pressures of 80 to 100 which minus one fraction does not in the least invalidate an excellent prognosis. This is not unexpected when we consider that healthy infants normally have a pulse of 90 to 115 with a blood pressure of 80 or thereabouts making a quotient of less than one. In the adult, the quotient (normally) is about 1.6. Gibson's rule, in adults at least, seemed to be of very considerable aid in prognosis and indication for treatment.

1. Citations taken from Osler's Modern Medicine, 1st edition, vol. ii, pages 570-571.
2. Citations after Lambert q. v.
3. Lambert, A. The Blood Pressure in Pneumonia. Journal Am. Med. Ass'n, vol. lvii, No. 23, Dec. 2, 1911.

SPECIAL FACTORS CONCERNING SURGERY OF CANCER OF THE LIP AND TONGUE.*

By H. A. L. RYFKOGEL, M. D., San Francisco.

In recent years physicians and sanitarians have been devoting great attention to educating the laity in the prevention and methods of cure of tuberculosis, and as a result of their efforts the disease has been steadily decreasing, and when patients are infected they, as a rule, no longer put obstacles in the way of a rational treatment.

Not so is it with cancer. This disease has but little if any attention paid to it by those interested in preventive medicine, and yet, while it is to a great extent preventable, it is steadily increasing. Thus Williams claims that in England, the rise is 3% to 5% per year. An extreme example is that of the little town of Fillingsboro in Sweden, where the deaths from cancer increased from 2.10 per 100,000 living in 1800 to 118 per 100,000 living in 1900. The Scottish widow's life insurance fund of Edinborough showed .93% of its deaths due to cancer in 1815 and 6.88% in 1894, or 600% increase in 76 years. The Aetna Life Insurance Co. in 1870 showed 2.6% of its deaths due to cancer, in 1906—7.3%, or nearly 200% increase in 36 years. San Francisco shows the highest death rate from cancer of any city in this country, or 125 per 100,000 living.

Until the ultimate cause of carcinoma and with it a medical cure for cancer is discovered, we must combat the disease by removing through medical and surgical means precancerous conditions, such as chronic ulcers, pigmented moles, benign tumors, areas of chronic inflammation, etc., and do away with sources of irritation, like jagged teeth, gall-stones and others too numerous to mention, and finally when the disease has developed, by removing it by efficient surgical means.

THE ETIOLOGY.

Cancer of the tongue and lip is frequently brought on by the irritation of tobacco smoke, and for this reason is much more frequently seen in men than in women. Therefore a striking proof of the causative role of chronic irritation is the frequency of cancer of the mouth in the women of Ceylon, who chew a mixture of betel nut leaves and lime. Cancer frequently develops at the point where a jagged tooth is constantly scraping a mucous membrane, and one not infrequently sees a cancer forming a socket as it were, for the offender. The role of syphilis in the causation of carcinoma is but an indirect one, in that it produces fissures, ulcers and thickened areas that after long duration and irritation by infectious agencies, irritating food or tobacco, form a point or area in which cancer readily begins. Areas of leukoplakia frequently undergo cancerous degeneration and warts on the tongue practically always are or soon become carcinomatous.

PATHOLOGY.

Omitting the cylindrical celled cancers of the tongue and lip, which are exceedingly rare, we have two types of epithelioma, the baso-cellular and the plano-cellular, the latter of which is the more frequent as well as the more malignant. Cancers of the tongue spread more rapidly by contiguity and by embolus than those of any other portion of the body, because the muscles of the tongue being just below the mucous membrane are easily infiltrated and by constant motion disseminate the cells and force them into lymphatic channels. Two years is the limit of life of a patient thus afflicted, if he does not receive surgical aid. Death has occurred as early as seven months from the time a lesion was noticed. Cancers of the lip are of much slower process.

Epitheliomata of the lip and tongue, although they early set free cells which infect the cervical glands but rarely get beyond the cervical lymphatic collar and form general metastases.

DIAGNOSIS.

The early diagnosis of cancer gives the greatest promise of successful surgical relief and I would urgently impress upon you that the so-called classical symptoms of cancer, cachexia, enlarged glands, and lancinating pains, are evidence not only of the disease but of the onset of the period when the duties of the surgeon cease and those of the priest and undertaker begin. One should always suspect carcinoma when there appears any persistent induration either as a localized chancre-like thickening or a stiffening of the base of a simple ulcer.

Changes in leukoplakic areas suggesting infiltration of the tissue below are very significant and warts on the tongue must always be considered potentially or actually malignant. The ulcerations of syphilis are more apt to be multiple and when of the secondary type are accompanied by other evidences of the disease. The tertiary ulcer is usually on the dorsum while cancer attacks the side; the tertiary ulcer is not as a rule painful, it shows little tendency to heal and its base shows a tough leathery slough; the carcinomatous ulcer, on the contrary, is painful, bleeds readily and has a soft, friable base.

Against two diagnostic methods would I particularly warn, namely: iodide of potash and mer-

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cury, and removal of small pieces for microscopic examination. Cancerous ulcers frequently improve temporarily under the iodides, particularly when associated with the mouth washes always ordered at the same time. Mercury is very apt to cause ptyalism, and in the presence of this complication, operations on the tongue become very much more dangerous. The removal of the growth and its examination by a competent pathologist is the only diagnostic procedure worthy of the name. The whole diseased area should be removed and handed to the expert who should make an immediate examination while the patient is still under the anesthetic, and if the removed tissue be malignant, the radical operation should be immediately proceeded with. Any other course is apt to cause a rapid dissemination of cancer cells.

Dentists should be trained to recognize precancerous and cancerous conditions, because in many instances they will have the first opportunity to note them.

ANATOMY.

The tongue anterior to the circumvallate papillae is supplied with a rich network of lymphatics which converge to form numerous trunks, which following the general course of the lingual blood vessels empty some into the lingual and submaxillary lymph glands and others directly into the deep cervical. One trunk passes down the omohyoid muscle to empty into a gland situated at the lower end of the internal jugular vein. The lymphatics of that portion of the tongue posterior to the circumvallate papillae are almost entirely separated from those in front and converge to two trunks on each side which pass back of the tonsil and through the pharyngeal wall to the upper deep cervical glands.

Although an injection mass can be forced from one side of the anterior tongue to the other, the anastomoses between the two areas is very scanty and cancer but rarely passes from one side to another or from the anterior portion to the base, except as the result of growth by continuity. The lymphatics of the lip all drain into the submental and submaxillary lymph gland which empty into the external jugular and upper internal deep cervical.

Lymphatic glands. The cervical glands to be considered in cancer of the tongue and lip are: the lingual or submental, the submaxillary, the external jugular, the upper deep cervical and the lower deep cervical.

The lingual lie upon the myohyoid and between the geno-hyo-glossi. Two of these known as the submental are particularly liable to be overlooked in operations on the lip. The submaxillary glands lie beneath the deep fascia upon the capsule of the salivary gland and for their easy and certain removal it is necessary to take away this structure. The external jugular group (2-6 in number) lie along the external jugular vein to its middle on the surface of the deep fascia. Some vessels from the submaxillary glands empty into them. The upper deep cervical are those deep glands above the omohyoid muscle and are divided into an outer and inner group, the inner lie behind the sterno-mastoid, some being attached to the posterior layer of its sheath, and around the internal jugular vein and carotid arteries. They are large and receive the greater part of the lymph from the tongue, partly directly and partly through the submaxillary and lingual glands. They receive all the lymph from the lip through the above glands. The external upper deep group are small and lie in a continuous chain back of the sterno-mastoid. They need only be removed in advanced cases, in which event it is necessary to resect with them the sterno-mastoid muscle.

The lower deep cervical glands lie below the omohyoid draining the upper deep cervical and receiving one lymph vessel directly from the tongue.

It is necessary, therefore, always to remove them in cancer of the tongue, but only in advanced case of cancer of the lip, i. e. when the upper deep glands are evidently involved.

OPERATION.

If it were possible always to make a complete block operation in these cancers of the mouth, our results would be very satisfactory indeed, because the cervical lymphatic collar acts as a barrier so that general metastases very rarely occur. Unfortunately if the buccal secretion gain access to the extensive raw areas left by the necessary dissection, dangerous infection and sloughing are liable to occur. Fortunately the cells in cancer of the tongue and lip pass to the lymph gland by embolism and not by continuous growth, as in cancer of the breast, and one can perform an operation in two stages with a fair though not absolute degree of assurance that the lymph channels between the original growth and the block do not contain cancer cells.

Which shall we remove first, the original growth or the glands? If we remove the glands we take away that part of the disease which is growing most rapidly and we cut off the blood supply of the neoplasm, thereby temporarily inhibiting its growth and sometimes even causing a diminution in size and converting in the case of the tongue, an otherwise difficult and bloody operation into a very simple and comparatively bloodless one. The patient, moreover, still has his cancer and gives no objection to the second operation, whereas if the tongue has been removed first, he frequently does so.

The objection to doing the gland removal first is that the primary growth is still present and may feed more cells into the lymphatic channels to be overlooked at the next stage.

It is probable that this objection is not important if the vessels have been tied at the first stage.

In cancer of the lip when bringing flaps from the neck as described below, it may be necessary in order to maintain nutrition in the flaps, to do the lip plastic as the primary stage.

These operations are extensive and frequently done on the old and debilitated, and it is therefore necessary to use precautions to lessen hemorrhage and banish shock-producing factors. The patient should, therefore, during the operation, be

in the sitting position, partly to lessen hemorrhage and partly by anemia of the brain to lessen the amount of anesthetic required.

In order to remove the injurious action of fear upon the nerve cells, the patient should have had sleep induced the night before by veronal and brought to the neutral state described by Crile by an injection of morphine and scopolamine, one-half hour before the operation. The action of surgical shocks, such as sponging and tearing, should be reduced to a minimum by gentle handling and by blocking the lingual, dental and superficial cervical nerves by injection of novocain-adrenalin solution. The mouth should be carefully attended to, of course, for some days prior to the operation.

In cancer of the lip, the submental, submaxillary, external jugular and upper cervical glands of both sides must be removed.

If the upper cervical are macroscopically affected, the lower cervical must be removed also. Sometimes this must be done in two stages, making with the lip plastic three stages. In cancer of the tongue usually it is necessary to remove the glands only on the side affected; if the growth approach the median line or has deeply infiltrated the lingual muscle, or if glands on the opposite side are palpable, it is necessary to do a block dissection on both sides.

In cancer of the tongue it is necessary to carry the dissection from back of the clavicle to the styloid process above the digastric muscle. The incision for the complete radical gland dissection should extend from the sterno-clavicular notch to the mastoid process to meet another running from the mastoid process to the middle line or other mastoid process, as above indicated, one-half inch below the jaw.

The skin is dissected back in all directions and the deep fascia and fat containing the external jugular gland and vein is dissected off the surface of the sterno mastoid muscle which is retracted backward and separated from its sheath, which is cut through posteriorly, avoiding the 11th nerve. This mass of fascia and fat, to which are adherent many of the deep cervical glands, is dissected off the scalenius anticus and medius muscles, internal jugular vein and carotid arteries. The deep fascia is now dissected off the lower jaw to which it is strongly attached and off the parotid gland, the lower part of which cut through to catch those glands attached to it. The parotid gland is now lifted up and retracted, the facial nerve being protected by the blade of the retractor, the gland and fat above the digastric are dissected off the stylo maxillary ligament, the stylo pharyngeus muscle and pharynx.

If the case is at all advanced, it is wise to remove the digastric and stylohyoid muscles, the hypoglossal nerve and external carotid artery. If any glands are adherent to the jugular vein it should be sacrificed and ligated as closely as possible to the base of the skull. The pneumo-gastric nerve on one side under exceptional circumstances can be removed without great danger. The submaxillary gland is now pulled down and cut away from its attachments above; if one desires to dissect the posterior triangle, the sterno mastoid muscle should be removed in the block.

Drainage should be established through separate small incisions, using gutta percha tissue or silk worm gut rope.

I will not discuss the removal of the tongue beyond suggesting that tubage of the pharynx as suggested by Crile be used. I have found this trick to very greatly simplify this and other operations about the mouth.

I would also remind you that on account of the peculiar lymphatic supply of the tongue if the anterior part be invaded we can safely leave the base and if early, we can split the organ and leave the uninvaded half.

SALVARSAN IN CUTANEOUS SYPHILIS.*

By HOWARD MORROW, M. D., San Francisco.

Since December, a year ago, nearly all our salvarsan injections have been given intravenously. A few intramuscular injections of salvarsan in iodipin were given, but this method was found as painful and unsatisfactory as the original suspension for subcutaneous use. The greatest number of injections given to one person, was in the case of malignant syphilis, reported before this society last December. This man had two subcutaneous and two intravenous injections. His last injection was given in May, 1911. Since then he has had no symptoms of lues and his Wassermann reaction has remained negative.

The following cases will be reported briefly to demonstrate the various forms of syphilis suitable for treatment with salvarsan.

Mr. S., aged 42. Chancre of upper lip in July, 1908. This would not disappear under mercury given by inunctions and injections. Subjective symptoms were unusually severe. There was some improvement under arsacetin. Later, he had recurrent mucous patches on palate, cheeks and lips. These continued, notwithstanding specific treatment until January, 1911, at which time he was given .5 gms. of salvarsan intravenously. He was seen in November, ten months after the injection, and during that time he has been absolutely free of symptoms and his general health has greatly improved.

L. L., aged 11. Extensive ulcerations of soft palate and posterior wall of pharynx, and gumma of hard palate with perforation. Duration many years. Diagnosis: Hereditary lues. Ulcerations would partly heal under mercury, but new lesions would develop. She was given one injection of salvarsan intramuscularly, and two injections intravenously. The last was given in June, 1911. Since then the naso-pharnyx has remained healed, but the Wassermann reaction is still positive.

Miss B., aged 20, with generalized lenticulopapular and miliary papular syphilis, was injected with salvarsan in June of this year. Two weeks later there was very little change in the appearance of the eruption, so another salvarsan injection was given. After this second injection the eruption began to fade, but became stationary in two weeks. Since then the patient has received weekly injections of salicylate of mercury, and although clinical symptoms have disappeared, the Wassermann reaction is still positive.

Mr. C., 30 years of age, had his initial sclerosis in May, 1908. Vigorous treatment with mercury

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and iodide of potash for two years. A year and one-half ago he had perforation of the hard palate with much destruction of bone in the naso-pharynx. In November, 1910, he was given .45 of a gram of salvarsan subcutaneously. For a few weeks he improved rapidly, then relapsed, with increased destruction of bone, accompanied by severe headaches and much depression. He was again injected, this time intravenously, and the ulcerated area quickly healed. Since then he has had no luetic manifestations, and his Wassermann reaction is negative.

Mr. F. Palmar syphilis existing for one year. Initial sclerosis ten years previously. Received much anti-syphilitic treatment without influencing the palmar eruption. Salvarsan given in July of this year, and within one month the palmar eruption disappeared, and so far there has been no recurrence.

Salvarsan is indicated in all cases of active syphilis, unless contra-indicated by certain organic conditions. When we have a positive Wassermann reaction and no clinical signs of active syphilis it is advisable to give mercury in preference to salvarsan, as it has been demonstrated that mercury changes the Wassermann reaction as satisfactorily as salvarsan. A patient with a chancre, in which treponema can be demonstrated, should receive at least one injection of salvarsan, to be followed by at least one course of mercury, and the future treatment to be decided by the condition of the patient and the Wassermann reaction.

Many early cases of lues are undoubtedly cured by a single injection of salvarsan, but as there is no positive way of determining a cure it seems safer to repeat the injection as well as to give a course of mercury. The sooner the salvarsan is given after making the diagnosis, the more liable are we to abort the disease, and prevent the dissemination of the infection.

The papular eruptions of syphilis seem more resistant to salvarsan than the earlier stage, and although such cases should be injected with salvarsan, they should also be carefully treated with several courses of mercury. Cutaneous gummata and ulcerative syphilides are the ideal classical cases for salvarsan injections.

Palmar and plantar syphilides which resist mercury and the iodides, disappear rapidly after salvarsan.

Mucous patches and other syphilitic lesions of the mucous membranes, clear up rapidly after salvarsan, and this drug is certainly superior to mercury for such conditions.

The new drug is indispensable to all patients who do not tolerate mercury and the action is prompt on syphilitic conditions refractory to mercury.

In malignant syphilis, mercury and iodide of potash are almost powerless, and salvarsan acts marvelously.

The number of cases of optic neuritis, oculomotor paralysis and vestibular trouble, which are being reported, should serve as an extra precaution against indiscriminate salvarsan injections.

Discussion.

C. M. Cooper, M. D.: In reading the mass of articles which consider the use of salvarsan, some written by enthusiasts, some by those having an axe to grind, some by doubters and scoffers, and some by men of genuine soundness of judgment, one is constrained to recall the words of Bacon when he writes, "Read not to contradict, not to believe, but to weigh and consider. Some books are to be tasted, others to be swallowed, some few to be chewed and digested." The mere reading of these publications cannot then teach us our conclusions, rather must these be drawn from our knowledge of the character of the writers and from our own observations.

My observations upon the administration of this drug extend to—

1—Patients suffering from the parasyphilitic diseases. General paresis and tabes.

2—Patients with cerebro-spinal syphilis in whom the symptoms were mainly or entirely cerebral.

3—Patients with cerebro-spinal syphilis in whom the symptoms were mainly or entirely spinal.

4—Patients with symptoms of a neurasthenic type of syphilitic origin.

5—Patients with recurring mental disturbances in whom investigation demonstrated a leutic taint.

6—Patients who at the time of injection had no symptoms referable to the nervous system. In one of these in whom the injection was given a day or so after the first appearance of the secondary rash there developed three weeks later, it is true whilst under hard business strain, intense and persistent headache, quite marked deafness and blurring of vision without disc change, vertigo, and for a short time a partial aphasia, all these symptoms gradually lessening during confinement to bed and the intra-muscular injections of a soluble mercurial salt, and finally disappearing after thirty injections.

Such an outburst of nerve symptoms as a sequel to the use of salvarsan has been recorded in other instances, most commonly in cases in which the nervous system has been involved prior to the injection, and the term neuro-recidiv has been applied to the condition. Post hoc is not uncommonly, not propter hoc, and how and to what extent the drug salvasan is directly responsible is still a matter of speculation.

If then in this discussion I venture to state my position in the form of a few personal beliefs you will, perhaps, pardon the seeming egotism, and the evident triteness of some of the necessarily included statements.

1—I believe that the intravenous method of administering salvarsan is the procedure of choice, that freshly prepared sterilized distilled water is an admirable vehicle, and that the final solution should be filtered.

2—I believe that any procedure which involves the injection of fluids into the circulation by a large number of well and ill-trained men will result in some deaths due to errors in technic.

3—I believe that reasonable simplicity of apparatus is desirable, and that the use of a two-way needle will much facilitate the injection, will lessen the risk, and prevent the occurrence of local complications.

4—I believe it necessary in some patients to cut down upon a vein, and even after that be done, and the needle introduced into the lumen, it is at times most difficult to give the injection.

5—I believe that salvarsan in sufficiently large quantities is a poison to the body cells, and that under no circumstances should it be administered till a complete investigation of the patient has been made, that it is especially important to study the condition of the cardio-vascular system, of the eliminatory organs, and of the central nervous system, and that if these structures be badly crippled salvarsan is strongly contra-indicated.

6—I believe that a report that a patient's serum gives a positive or negative Wassermann reaction, though generally of great help, is not pathognomonic for or against syphilis, that a negative reaction is not infrequent in syphilis of the nerv-

ous system, that non-syphilitic nerve lesions occur in people who give a positive reaction, that the testing of the cerebro-spinal fluid by the now commonly used methods gives more trustworthy diagnostic data, but that all those tests may be negative in patients with undoubted cerebral syphilis of vascular or other origin, and that there still occur many instances in which the nature of the lesion has to be gauged by the therapeutic test. Thus the result of the serum reaction cannot be used as a general criterion for or against the administration of salvarsan to patients with syphilis of the nervous system.

7—I believe that though salvarsan often seems to exert a wonderful temporary influence over the symptoms and well-being of a patient afflicted with one of the parasyphilitic diseases, it is powerless to cure or to prevent the future development of these ailments. I have little confidence in the reports of the return to normal of pupils which have exhibited the Argyll-Robertson phenomenon.

8—I believe that in advanced stages of both these diseases, in paretics in whom convulsions are prone to occur, and in tabetics with changes in the optic nerve it is strongly contra-indicated, but that in a patient with lightning pains and gastric crises in whom other therapeutic measures have failed, the occasional symptomatic success that follows its administration justifies its trial before an intraspinal neurectomy be resorted to.

9—I believe that in the majority of patients who exhibit symptoms and signs of cerebro-spinal syphilis, the subjective symptoms can be more speedily relieved by salvarsan than by any other means at our disposal.

10—I believe that there are cases of cerebro-spinal syphilis, both of the cerebral and spinal type, in which little betterment results from salvarsan though the patients may later react well to mercury.

11—I believe that occasionally not only does no improvement ensue, but that a marked exacerbation of the process may result which may kill the patient, whether this be or be not due to the Herxheimer reaction is not of much importance to the dead patient though of much scientific interest. The idea that salvarsan should be withheld in syphilis involving vital nerve areas such as the medullary nuclei, and the mid and upper cervical spinal segments, but that it can be safely given in nerve syphilis in other areas, I regard as dangerous, for if an exacerbation in the former areas may kill, surely in other regions it may lead to injury, and there are many who would prefer dissolution to a permanent hemiplegia.

12—I believe that the theory that the neurorecidiv can be cured by another injection of salvarsan is not proven, and that in such cases the organs of elimination should be thoroughly restudied before another injection be given, and that in any such case it is safer to administer mercury.

13—I believe that an initial treatment with mercury renders the subsequent injection of salvarsan much less prone to cause injury provided the organs of elimination be sound, that such an injection can be later repeated, and this in its turn followed by further mercurial treatment with marked benefit to all forms of syphilitic lesions of the cerebro-spinal system, and that if salvarsan be used it should be employed in this manner.

14—I believe that prior administration of an arsenical preparation forms a contra-indication to the immediate use of salvarsan.

15—I believe that the frequent use of small doses of salvarsan, though of decided tonic effect, is not calculated to fulfill the mission of its birth, viz: the cure of syphilis.

In conclusion I believe that this latest product of Ehrlich's genius is not the master drug in the therapy of cerebro-spinal syphilis, but must be content to serve as a handmaiden to mercury.

John C. Spencer, M. D.: My experience in the use of salvarsan is limited, but since the chairman asked for expressions of individual expericnces, I will refer to my first case. I used salvarsan upon this patient bearing in mind the possible effect upon certain special nerve structures. The man had for more than 20 years suffered from difficulty of hearing, probably a sclerosing catarrh. When he came into my hands the auditory nerve was undoubtedly affected. I injected salvarsan intravenously and in 48 hours his hearing had almost entirely disappeared to his great distress, because the difficulty of hearing had been a sore trial. He even considered suicide. His hearing gradually improved so that at the end of about one week, it had returned to about the former condition. The coincidence was too striking not to convince me that the sudden aggravation of his deafness was directly due to the effect of the remedy. He has since passed into the hands of Dr. Swinburne of New York City.

H. R. Oliver, M. D.: I would like to pay a few words in defense of the Wassermann reaction. It is a well established fact that percentage of positive results with the Wassermann reaction has been found to be about the same (by various workers) in the different forms of lues. We should therefore consider this in our interpretation in any given form. As the percentage is greatest in congenital syphilis and general paresis, where the results are approximately 100%, and lowest in cerebral syphilis where it is about 57%, so that it is important to consider this as it is a point in differential diagnosis. It is a mistake not to have the reaction done before the administration of salvarsan, whether the diagnosis is made or can be made from clinical symptoms or not.

It is well to know whether the patient is negative previous to the time salvarsan was given; for in that way only would you be able to know if the reaction taken after is due to a natural negative reaction or caused by salvarsan. Often a patient may be negative before the administration due to some unknown influence, either treatment or technic or want of sufficient antibodies in the blood at the time to give a positive result and become positive after. The reaction also often gives an index to the time of disappearance of the salvarsan—for it has been found that the weaker the reaction before its administration, the shorter time has to elapse after for the blood to free itself of spirochetes and antibodies and become negative. As a rule it takes two months for this to take place in the average case, some in one month, some it takes three months. Some cases as in chancre before the systemic symptoms occur are negative before and never become positive.

S. J. Hunkin, M. D.: I have had 20 or 25 cases of bone syphilis in the last two years and in all of them the clinical symptoms have cleared up under the injection of salvarsan temporarily. In a great number of instances of children having diseased bones with big granulated areas as big as the back of the palm of the hand they have healed in two weeks. No case, however, has remained cured. In every case the lesions have recurred in other places. I am especially considering some cases to which I called attention several times during the last ten years; these are cases of osteomyelitis of the long bones occurring in young children. Many years ago I said they could not be syphilis because I had gone over all the other children in the families, and the parents and found no syphilis at all among them. Several years later I stated that these same cases were syphilis because I had found other stigmata in the members of the families and by the Wassermann they were shown positive. They all improved under iodides and at the present time are all cured temporarily at least by injections of salvarsan.

H. C. McClenahan, M. D.: Our experience in the

Neurological Clinic of Cooper Medical College is entirely in conformity with the report of Dr. Moffitt. In cases of tabes, several receiving three or more intravenous injections, some improvement was noted in the sensory symptoms with slight, if any, improvement in the ataxia. I would like to mention the case of a young man 30 years old with primary optic atrophy, but with sufficient vision to read large print, who became totally blind in three days after an intravenous injection of salvarsan. He has not had any vision since. The injection was given at Lane Hospital.

Geo. D. Culver, M. D.: I wish to put in a plea for the use of mercury after salvarsan. Frequently a persistent case of syphilis will react better to mercury after one dose of salvarsan than it would before the use of this drug. The mercury should again be tried before another dose of salvarsan is given.

Louis I. Breitstein, M. D.: I wish to report five cases of syphilis in pregnancy treated by salvarsan and mercury. Two cases were in the service of the University of California Hospital, one in the San Francisco Maternity and two in private practice. Syphilis is aggravated by pregnancy and a latent syphilis is apt to be re-awakened. These cases came under my observation six weeks before date of expectancy. The diagnosis was made promptly. Wassermann reactions were all strongly positive. They were given 0.5 gm. salvarsan intravenously and mercury in form of inunctions. They all went to full term and were delivered of babies free from any signs and symptoms of syphilis.

I want to make another statement and that is in regard to the selection of wet nurses. Owing to the fact that a positive Wassermann means syphilis and a negative Wassermann does not mean that the patient is free from syphilis, it has been my practice where I am to select a wet nurse to have a Wassermann test made of her blood. If it is negative that does not suffice for I make a Wassermann test of the blood of her infant. Hereditary syphilis in the new born will show a positive Wassermann to the extent of 90%, so if the infant's reaction is positive the mother is syphilitic and therefore not chosen

Dr. Alvarez: The Wassermann is of great value in the treatment of cerebro-spinal syphilis and in the old cases where there are no symptoms or we wish to know whether the symptoms presenting are syphilitic or not. Men come to us very much frightened and they want to know whether they can stop worrying or whether they must begin treatment again.

A man came to us recently with the history of an old syphilis which for years had given no sign other than recurring plaques in his mouth. His reaction was positive and it remained so after several courses of mercury and an injection of salvarsan. He then became disgusted with treatment and sceptical about the value of the Wassermann and we lost sight of him. Several months later he was found unconscious in his office and went into a status epilepticus from which he was roused only by the most strenuous treatment with mercury and salvarsan. Only once since has the reaction turned negative, but it remained so for only a short time. Such latent but at the same time malignant cases must be controlled by the Wassermann.

F. C. Keck, M. D.: I wish to make a few remarks in regard to the physicial effects after the injection and about the results due to fault of mixing.

To follow the directions which come with salvarsan we are supposed to use 23 m. of a 15% sod. hyd. sol. This is enough for some packages. But there are others that require almost 30 m. to make a neutral or alkaline solution. It is very important to have a proper solution. If the mixing is not carefully done, there will be a precipitate, which, if filtered out, will leave an inert liquid, which does the patient no good. The temperature of injecting salvarsan is also very important. It should be of blood temperature, about 100° but not over 103°. If it is either above or below that, some patients will complain of a burning or stinging pain along the vein in use for injection.

The fever, chills, vomiting, headaches, diarrhea, etc., are not due to the arsenic, nor to the arsenic attacking the syphilis. I have given from 150 to 300 c.c. of physiological salt solution intravenously and have produced the same symptoms. I have given saline solutions stronger than normal, as much as five times the normal strength, in quantities from 100 c.c. to 300 c.c.. All produced temperature ranging from 99° to 104°, some having severe chills. One case, an elderly lady, had 150 c.c. saline solution intravenously at 9:45 a. m. At 10:30 the same day she had a severe chill, at 12 nauseated, 12:30 vomited, 1:30 soft defecation, at 2 p. m. same day temperature 103°, at 3 p. m. 103.8°, at 3:30 p. m. 103.6°, at 4 p. m. 103°. This kept going down until 10:30 p. m. of the same day, when it was 100.2°. The next day highest temperature was 99.8°, the following day was normal and remained so. Pulse was always full and strong, bowels loose, patient complained of headache and drank a great deal of water. One week after this first intravenous injection I gave the same patient 30 c.c. intramuscular. This was followed by a temperature of 99.8° and slight malaise. I repeated this every four days, going up to 45 c.c. with no temperature following, but looseness of bowels continued.

I have noticed that full-blooded individuals show more reaction; they have stronger chills, higher temperature, vomit and have diarrhea. Bloodless, thin and emaciated ones have no visible chills and only slight temperature.

All my intravenous injections of saline solutions of various strengths and quantities produced the same symptoms as salvarsan. If given cold the patient complains of pain at the point of injection, if given hot he also complains. If given at a temperature of 100° or 103° he has no pain. No serious results or deaths have ever followed. I have given about 200 injections.

THE INTRAVENOUS APPLICATION OF SALVARSAN, WITH SPECIAL REFERENCE TO ITS TECHNIC.*

By GEO. W. HARTMAN, M. D., San Francisco.

From the Genito-Urinary Service of the German Hospital, San Francisco.

Since salvarsan became available we have treated one hundred and one patients with one hundred and eighty injections,[1] mostly in the genito-urinary department of the German Hospital. The largest number of injections given any one patient was seven, the largest amount, 3 grams.

The first two injections were given intramuscularly but after seeing quite a number of abscesses and necroses following this method, to say nothing of the pain and discomfort, we abandoned it in favor of the intravenous method, in conformity with the results of the majority of the European clinics.

At that time there was no apparatus available for the injection and we were obliged to devise our own. It has proved very serviceable and we are still using it. It can be assembled at a very moderate expense as can be seen by the accompanying

* Read before combined meeting of Medical and Urological Sections of the San Francisco County Medical Society, Dec. 5th, 1911.

illustration. A is an ordinary hydrometer jar fitted with a two-hole rubber cork. Through one hole is a glass tube ending flush with the bottom of the cork inside and projecting a few centimeters outside. Over this is slipped the tube B. C and D are windows along the length of the tube to indicate the progress of the last few cubic centimeters of the fluid. E is a tube extending above the level of the fluid inside and terminating outside in an upward bend, G.

The solution is poured into the cylinder, the cork inserted and the whole inverted. As the fluid flows out through the tube B, air replaces it through E. Usually a bubble of fluid remains at the bend G and this is carried along with the air, breaking as it reaches the top and flowing back. The speed with which it rises is a direct measure of the rapidity of the flow. The bubble should rise rapidly upon opening the clamp. If it does not it is sufficient evidence that the needle is not in the vein.

Air can be expelled most easily from B by alternately raising and lowering the cylinder, before starting. Should it be desirable, salt solution can be injected before and after the salvarsan by duplicating the cylinder and fittings and connecting them by a glass Y or a three-way cock.

The vein can be entered easily if the calibre of the needle be not too great. There is an appreciable decrease of resistance as it passes through the perivenous tissue into the lumen of the vein. It can be approximateed by passing a needle obliquely through a rather stiff-walled rubber tube.

Having found, by means of this difference of resistance, that it was possible to tell when we were in the vein, we have done away with preliminary injections of salt solution and with that maneuver which has been accused of being responsible in some instances for thrombosis allowing blood to flow through the needle before connecting it to the apparatus.

In only one instance was it necessary to do a venesection. This in an exceedingly adipose, half-witted child a patient of Dr. Newmark.

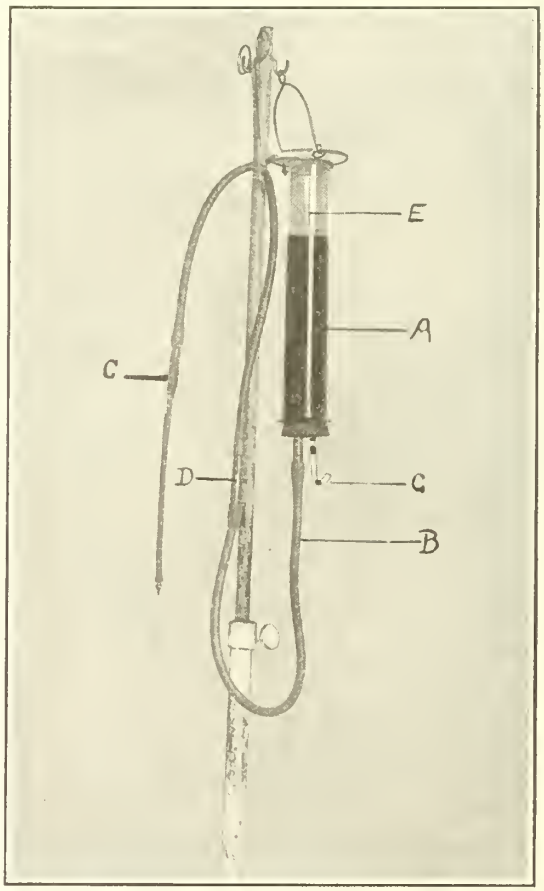
At first chills and temperatures up to 102.5° were not uncommon, but by gradual refinement of technic and added precautions we have gradually eliminated these so that a temperature of over 99.5° is comparatively rare. The arsenic symptoms are not common. Occasionally we get anorexia or slight nausea; less commonly vomiting. Headache and pain in the limbs occurs. We have seen no diarrhea. (Since reporting the above we have substituted distilled water for salt solution, as recently suggested, and have had a few slight diarrheas during the first twenty-four hours. Further observation will be necessary to determine whether this was due to the absence of salt.)

In two cases the "Herxheimer reaction," a bright red erythema over the chest, back and thighs was noted. This disappeared in a short time. So far none of the complications, either local, such as sloughs and persistent induration or remote involvement of cranial nerves, has been met.

In the beginning one injection only was given but we soon found that the secondaries did not yield and so followed it with a second, seven or ten days later. In two cases, however, in which only .6g was given there have been no recurrences to date, a period of eleven months.

A number of marked secondary manifestations have cleared up promptly after the second injection. In protracted secondaries we have followed lately the suggestions of Wechselmann and others of combining salvarsan and mercury by inunction and injection and consider this much superior, as regards disappearance of symptoms and recurrences, to the old treatment of mercury and potassium iodide.

A few parasyphilitics treated with salvarsan have apparently not been materially benefited. In one case, however, a man of 34 who entered the hospital with a strongly positive Wassermann and marked bladder symptoms which proved to be due to spinal lues, a decided improvement of sensation-pain, temperature and touch followed the third injection of salvarsan and was even more perceptible after the fourth.



Apparatus for the intravenous injection of Salvarsan. Three bubbles can be seen rising in the tube at G.

In two cases of brain lues excellent functional results were obtained by combination with mercury. In one, four injections were given, each of which was followed by a perceptible improvement of symptoms. A left hemiplegia almost entirely disappeared and articulation was very much improved.

Further time and observation will be required in these cases, especially as to the permanence of the improvement.

In a case of leucoplacia of the tongue of fifteen years' duration with a strongly positive Wassermann the lesions began to disappear after the first injection; now, after four, they are almost entirely gone.

In a case of several years duration diagnosed as trifacial neuralgia the superior maxillary branch of the fifth nerve had been cut, without relief. A positive Wassermann suggested the trial of salvarsan, following four injections of which the symptoms cleared up and, as far as we know, have not returned. We have seen a number of grave secondary syphilides, maculo-papular eruptions, severe ulcerations of the oral cavity and such which showed marked remission in two or three days, with distinct improvement of the patient's general health. This was frequently observed in patients whose condition demanded prompt and vigorous treatment but who could not stand mercury.

In these cases as a rule two injections were sufficient to remove all general and local symptoms, although some showed, shortly after, new specific lesions. In one case an oculist in Reno notified us of a specific choroiditis in a patient four weeks after he had left the hospital, apparently well, after two injections given seven days apart.

In a number of cases recurrences were noted a few months after injection. These promptly gave way under combined mercury and salvarsan treatment.

We have used salvarsan as a provocative agent for the Wassermann. One patient having mucous patches on the tongue and giving a luetic history but a negative blood test had a strongly positive one after the first injection. The same occurred in a patient with a tibial periostitis with marked thickening and pain, especially at night. A positive reaction followed the first injection, the pain was much lessened and disappeared after the fourth.

A few words must be added on those cases presenting a positive Wassermann but otherwise negative clinical findings. We have observed in these that occasionally a + Wassermann became + + after one or two injections of salvarsan. In some we were not able to change a positive Wassermann despite vigorous treatment with salvarsan and mercury. It will require further time and repeated blood tests to settle the question whether these cases really should have received treatment on the only evidence presented, a positive Wassermann. This opens the question of the reliability of the Wassermann which is still sub judice.

From our own experience we feel justified in formulating the following conclusions:

1. Salvarsan is not the great sterilizing agent capable of eradicating syphilis with one injection, as Ehrlich hoped. On the contrary, recurrences after salvarsan seem to be as frequent as with the older methods of treatment.

2. In the initial stage of syphilis, especially in the period of beginning secondaries, one intravenous injection is capable of rapidly removing all untoward symptoms—a phenomenon never noted with any of the older methods of treatment—but in the majority of instances recurrences set in.

3. Salvarsan in conjunction with mercury by inunction or injection exerts more marked healing power than mercury alone, in any form.

4. Tertiary lues and parasyphilitic lesions do not seem to yield readily to salvarsan though more time and closer observation will be required to settle this point permanently.

5. The intravenous injection of salvarsan, if properly carried out, is painless and almost devoid of danger and should be the method of choice.

6. The modern treatment of syphilis is unthinkable without salvarsan and the Wassermann test.

1. Brought up to Dec. 15th, 1911.

ALCOHOLIC INJECTION OF SUPERIOR LARYNGEAL NERVE.

By H. S. MOORE, M. D., San Francisco.

This paper is merely a sketch to try and bring out some ideas that have come to me since I have seen the work of Dr. Hoffman of Munich. During the year I spent in his Nose and Throat Clinic I assisted him with his first experiments of alcoholic injections of the superior laryngeal nerve. At this time the injection was used solely for the relief of pain incident to tubercular laryngitis. We found much good in it and since my return I have given it for a number of physicians in San Francisco, knowing they would be able to help sufferers of the laryngeal type of tuberculosis.

Since then I feel in some of the work I have done that alcoholic injection may be used for many other things than the relief of pain and if one had the amount of material necessary I believe that something might be done in the way of using it for its anesthetic effect entirely in inter-laryngeal surgery. As we all know, we have a great deal of difficulty in getting the proper amount of anesthesia with local applications of cocaine, etc.

We can if we study our anatomy and physiology a little and right here is an amusing though deplorable fact, found when I started to look up data on the nerve supply of the larynx; that descriptions from the days of Flint in the days of 1873, who was an acknowledged authority at that time, up until the present day are copied almost word for word with no additions and, necessarily nothing new. So I shall not burden you with any redecorated hash concerning the nerve supply. The larynx is supplied from the external and internal branches of the superior laryngeal nerve,

from the inferior and recurrent laryngeal and from the sympathetic. The inferior laryngeal is almost entirely sensory. Now right here is a point that will account for any failures exclusive of faulty technic. The third, fourth, fifth, sixth, seventh and ninth nerves all give off branches inside the skull and each of these roots, together with branches from the sympathetic system, contribute to form a new ganglia. This makes for complications and it is no wonder there are some partial failures, a marvel that there are not more.

The internal laryngeal divides into three principal branches; the first supplies both surfaces of the epiglottis, the second, the aryteno-epiglottidean folds and the third, which is the largest, supplies the mucous membrane of the larynx and communicates with the recurrent laryngeal. The sensory branches of the laryngeal nerve forms a sub-epithelial plexus, from which fibres ascend the mucous membranes of the larynx and also supply a few taste buds scattered on the posterior surface of the epiglottis. This accounts, when doing inter-laryngeal work, for some of your patients claiming to have tasted medicines that you are sure have not touched the tongue. Most of us believe all the taste nerves center there. These sensory nerves have a remarkable tendency to cross and recross the median line and certain regions are reached from both sides, though I have found in the cases that I have injected that the nerve for the right side predominates and that its injection is often sufficient for the whole larynx. The only motor fibres, of the superior laryngeal nerve, supply the crico-thyroid muscle which acts as a tightener of the vocal cords and gives you the queer voice phenomena after injection with sometimes startling improvement. I wrote twenty-five of the leading men in the country who do laryngeal work to try to gather as large a number of cases as possible so that I might have some statistics to offer you. Out of the twenty-five letters, fifteen were polite enough to answer, for which I am very grateful. None of these men have had many cases though all seem to be anxious to know something about alcoholic injection. I am surprised for it has been in use for over two years while Schlosser, of Munich, the originator of alcoholic injections for other nerves, has been using it for more than five years. The relief from pain is prompt and complete, the operation is entirely without risk and the pain is very, very slight. I suspect its non-use is from fear of arterial puncture.

The injection is given with an ordinary hypodermic syringe but with a needle graded in centimeters. I use the 95% alcohol warmed to 110 Fahrenheit without any combination of eucain or cocaine as it is entirely unnecessary, and only makes for complications. With the patient in the recumbent position and the field thoroughly cleaned with either iodine or alcohol, I grasp the larynx in the left hand, with the first three fingers pressing firmly on the opposite side from which you are going to inject, bringing the larynx decidedly out of the median line; then with the index finger nail firm pressure is made along the superior rim of the larynx, on the side you are to inject, just about where you suppose the exit of the superior laryngeal occurs. When you have found this point, the patient feels a decided twinge of pain which follows up the neck to the ear on that side. Now keeping this point carefully in view, the needle is plunged in about one centimeter and a half and the nerve searched for with the point of the needle. You are sure of its correct location by a repetition of the symptom just given—pain in the ear. Then with your syringe barrel filled, inject until you are sure you have completely covered the nerve—when the pain ceases. While the needle is in position the patient refrains from swallowing or any movement of the larynx. I find that sometimes as little as five drops gives relief, while at other times one must use one-half barrel or so. It is not always necessary to inject both sides, though if the larynx is badly affected it is better to do so. Immediately upon the successful injection of the nerve, your patient gets complete relief and within a few hours there will be a wonderful change in the tone production and in twenty-four hours a great deal of the superficial edema of the mucous membrane has disappeared. I will cite you one case. A man 42 years of age, family history clear. Was convicted of a felony in Los Angeles and sentenced to San Quentin for three years. Three months after his incarceration he developed a cough, fever, and rapidly lost weight. He says the prison physician did not make a diagnosis but persisted in giving him cough mixtures. He remained in prison sixteen months. I saw him three days after his release and found a well developed case of laryngeal tuberculosis, the whole box so swollen and painful that every mouthful of food or drink he took caused excruciating pain. He was able to speak only in whispers. I injected both sides and the relief from pain was complete and instantaneous and in twenty-four hours he could produce almost normal tones. I kept him under observation for two weeks, when he had to leave town and up to that time he had no recurrence of pain and the swelling had greatly subsided; the only inflammatory areas remaining being in the neighborhood of three small ulcers situated on the false cord. The relief of pain may continue for days, weeks, months and in one case over a year; there is no harm in reinjecting. Here is a series of twenty cases covering a period of six months. Seven injected in the right side only, thirteen on both sides; two delayed results, one of twenty-four hours and one of forty-eight; reinjected eleven cases; reinjected three cases twice. In a recent letter from Dr. Hoffman he states that some of his cases have lasted over a year.

CHOICE OF TECHNIC IN HYSTERECTOMY.*

By J. HENRY BARBAT, M. D., San Francisco.

The choice of operation in hysterectomy must depend on the pathology present. The pathologic conditions which demand hysterectomy are cancer, myoma, fibroid, infection, adhesions, prolapse and cases demanding Porro operation. Which type of operation shall we choose, and what shall be the determining features? In cancer of the cervix, seen sufficiently early, the best *end* results are to be obtained by using Wertheim's operation or one of its modifications. Vaginal hysterectomy offers very little more than thorough curetting and cauterization with 50% chloride of zinc, and is only to be considered when the patient is too weak to stand the abdominal operation, or the cancer is too far advanced to expect a probability of cure. Cancer of the body of the uterus should invariably be attacked by the abdominal route, as we often find that the disease has advanced further than was supposed and operation is useless.

Much time may be saved in cases of cancer of the cervix by curetting away the cancerous mass, ringing the vagina and separating it from the surrounding tissues, then sewing it up so as to prevent any soiling of tissues. This should be done before opening the abdomen. This eliminates one of the difficult features of the operation and enables the operator to cut the vagina at the proper height. After the uterus, adnexa and lymphatic glands are removed, it is advisable to cover over the area which is denuded of peritoneum with the sigmoid flexure, as practised by Faure of Paris, or by using a piece of omentum which may or may not be detached. This prevents adhesions of the small intestines and separates the lower pelvis from above in case of infection. It is advisable in all these cases to use gauze loosely packed in the upper part of the vagina and left in until adhesions have formed, usually two or three days.

Regarding the end results following hysterectomy for cancer of the uterus, even the most ardent advocates of the vaginal method have to admit that there are very many fewer recurrences after a complete abdominal operation than after one through the vagina. One of the most important points to remember, whether the operation is done through the vagina or the abdomen, is to have plenty of room, and when the vagina is at all narrow, ample room may be obtained by slitting it from the cervix to a point near the tuberosity of the ischium, being careful to avoid the rectum. Schuchart.

The technic which I usually employ is as follows: Before opening the abdomen, curette and cauterize the cancerous mass, ring the vagina, separate it from the surrounding tissues and sew it up. Open the abdomen, using high Trendelenburg position, pack the intestines back, ligate the ovarian vessels close to the pelvic brim, open the peritoneum over the internal iliac arteries and ligate the uterine vessels. If the lymphatic glands show the slightest sign of enlargement or induration they are removed. The lateral attachments of the vagina are then cut through and the bladder having been separated from the uterus, the mass is removed entire. The bare surfaces are covered as described above, the vagina loosely packed with gauze, and the abdomen closed without drainage.

I have not employed Werder's ignihysterectomy, and can not compare it with other methods, but would caution those using it to avoid the danger of burning the tissues close to the ureters, bladder or rectum.

For the removal of the myomatous uterus the abdominal route is undoubtedly the method of choice. Operators through the vagina may undoubtedly become expert enough to remove even large myomatous uteri by morcellation, but there is nothing to gain and much to lose by not opening the abdomen in these cases. The excuses usually given for vaginal removal are absence of post operative shock, rapidity, and absence of abdominal scar. In the last hundred consecutive cases of hysterectomy for myomata or fibroid uterus, all abdominal, I have had no deaths, the post operative shock has been practically nil, and when the uterus is not adherent nor packed in the pelvis, its removal is accomplished in a few minutes. We have of course to close the peritoneum and abdominal wall, which requires a little more time than finishing from below. The advantages gained by working from above are many. Absence of vaginal scar, which often causes more trouble than the abdominal scar. Retention of the cervix, which can be conserved in most cases. The ability of the operator to examine and correct any coincident conditions which may be encountered.

After the abdomen is opened, examine the location of the tubes and ovaries, this will indicate the position of the ovarian vessels and broad ligaments, which may be very much distorted. If the mass can not be lifted out of the abdomen and presents no point easy of attack, the safest way to begin is to bisect it and turn each half out, removing loose myomata as they appear, thus reducing the size of the tumor, and often clearing up what appeared to be a hopeless anatomical tangle. The hemorrhage from these myomectomies is not usually severe enough to cause any alarm, as the uterine muscle contracts rapidly, assisting materially the hemostasis. It is better in this type of case, after bisection and myomectomy, to cut through the cervix below the lowest myoma, and by making traction, exposing the uterine vessels, which should be clamped and cut. Continue the traction, and each half can be rolled out of the abdomen with the ovarian vessels acting as a pedicle which can be easily clamped. When the broad ligaments have been invaded by the myomatous growth, it is well to bear in mind that the ureters are often lifted out and lie on the circumference of the tumor.

If we find that the growth has encroached more on one side than on the other, begin the operation

* Read before the Surgical Section of the San Francisco County Medical Society, March 19th, 1912.

by ligating the ovarian vessels on the easier side, cutting down to the uterine vessels and clamping them. Cut across the cervix, make strong traction, exposing the uterine vessels on the other side, clamp, cut and roll the mass out; clamp the ovarian vessels and cut. H. Kelly.

If the myomatous uterus can be lifted out so that the cervix is exposed, the prettiest and quickest operation is that of Faure, of Paris, who transfixes the cervix and cuts across severing all the cervical tissue. By lifting the tumor the cut surfaces are separated from one to one and one-half inches, and the uterine vessels are easily seen and clamped. A clamp is placed on each set of ovarian vessels, and the specimen removed. This part of the operation can be easily done in a few minutes. The bilateral method is usually the slowest and offers no advantages. The question of the removal of the adnexa is not settled and must rest with the operator. My advice is, unless there are very strong reasons to the contrary, remove them or they will have to be removed subsequently in many cases.

In ligating the vessels, always pass the ligature through the tissues with a needle and thereby avoid any possibility of the vessels retracting and causing subsequent hemorrhage. Bury the stumps of all vessels and leave no surface uncovered by peritoneum. If much broad ligament has been sacrificed, cover with sigmoid flexure or a piece of omentum. Shall we remove the cervix? It is rarely necessary to do so. I have had no recurrences of myomata in cases in which the cervix was not removed. If there is any history of cancer in the family, or if the cervix is lacerated or badly diseased, it had better be removed. The quickest and easiest method is to split with scissors anteroposteriorly right through into the vagina, then cut each half out keeping close to the cervical tissue to avoid the ureters. The bladder and rectum must be carefully handled as they are often thinned and may be torn during efforts at separation from the tumor mass.

When both tubes are the seat of infection, and the disease is chronic, the best result will be obtained by removing the uterus with the rest of the diseased tissues, as it will be found to be infected, and probably require subsequent removal, if left in. It is better to use drainage in all these cases, either through Douglass cul de sac, or preferably by splitting the cervix posteriorly through into the vagina and passing gauze or tube or both from above down into the vagina. This is easily accomplished by using a piece of wire made into a ring and then flattened and bent to fit the pelvic curve. The gauze is passed through one end of the carrier, the other end of which is passed through the cervix or cul de sac and drawn through the vagina by an assistant.

Always attack the easiest point first, leaving the most inaccessible part for the last. This gives us the cue in the choice of operation, and will enable the operator to save time, and simplify the work.

Discussion.

Dr. L. H. Hoffman: I am sure that all present have been much interested and benefited by Dr. Barbat's demonstration and in the main I agree regarding abdominal hysterectomy being the operation of choice. I think most operators voice the opinion that the vaginal operation as a rule is an operation that must be reserved for specially indicated cases. The German gynecologists have shown how important it is to do a laparotomy to determine the extent of the invasion in carcinoma cases before decision as to its operability. Regarding the operation of myoma the indications are very strict. In cases of large myomata the vaginal operation is more dangerous than the abdominal, thereby limiting its scope. In regard to incisions, personally I find the transverse incision of Pfanensteil or one of its modifications a desirable one and an incision that aids in operation, but it has its limitations to tumors with their upper level at the umbilicus. In cases of myomata I very often make a preliminary ligation of the ligamentum coronaria uteri through the vagina, pack with gauze and complete as an abdominal hysterectomy. It is important that we should familiarize ourselves with the different procedures because in certain cases we have to employ them. I think we should master one technic and use the others in indicated cases. Regarding the extirpation of the uterus in carcinoma cases, I am in the habit of doing preliminary work through the vagina and instead of using scissors I use thermo cautery in outlining the vaginal incision and severing the broad ligaments.

Dr. F. B. Carpenter: The technic of the author of the paper is so similar to my own that there is hardly any occasion for my discussing it, but I disagree with him in regard to the removal of the ovaries in every case. I believe it is not good policy ordinarily to sacrifice the ovary which may be a good organ, although perhaps the removal of the uterus made away with its legitimate functioning. However, I think that if an ovary is in a condition in which it is not necessary to remove it that it ought to be saved.

Dr. Julius Rosenstirn: I have only one remark to make on Dr. Barbat's paper, and join with the previous speaker in seriously objecting to the removal of the healthy ovaries as an ordinary routine measure in hysterectomies for fibroid tumors. Dr. Barbat said in his paper that he always found it necessary to remove these organs afterwards, on account of their giving trouble when they were left at the primary operation. This I think is a mistake, such trouble is caused by the tubes when their occlusion is apt to give rise to hydrosalpinx and similar pathological processes. If exsection of the tubes is done and the ovaries remain there is no further trouble, and the distressing nervous symptoms apt to occur in women deprived of their ovaries before the climacteric change, remain absent. It has been my practice to remove all or the greater part of the tubes but to leave the ovaries if they are in a condition to be left.

Dr. Henry J. Kreutzmann: In regard to hysterectomy for carcinoma I have seen so many reports in the literature where there has afterwards been gangrene of the ureter, and of the bladder and it is doubtful to me whether the patient is better after the operation. The main thing to keep in mind is early operation and I believe that if the operation is done early that the simple vaginal operation is a lasting success. The operation of Wertheim is a difficult and formidable operation; it is not an easy operation. I do not see any reason why the cervix should not be removed in hysterectomy for fibroid of the uterus; there have been a number of cases reported where after operation carcinoma developed on the cervix. Years ago

before the Academy I reported a case where after fibroid operation there developed a fibroid of the cervix.

Dr. Barbat, closing discussion: I rather expected to hear from the exponents of vaginal hysterectomy, and I am sorry I did not, as I had something saved for them. While in Vienna I asked one of the assistants in the gynecological clinic how the end results compared in the different types of operation, and he informed me that Wertheim's were the best. When I asked him why they did not do Wertheim's operation in his clinic, he informed me that this was Shauta's clinic. While we will still have to do hysterectomies for cancer for some time, I believe that in two years we will have a remedy that will cure our cancers without having to take them out. Regarding the removal of ovaries, when a woman is within a few years of the menopause, I remove the ovaries and tubes, in younger women they are best left in if not diseased. The tubes are better out.

THE TREATMENT OF URETHRITIS IN THE MALE.*

By H. CLIFFORD LOOS, M. D., and A. E. BANKS, M. D., San Diego.

In no department of medicine is there such a uniformity of opinion as that which prevails in regard to the results following the intelligent treatment of urethral discharges, which being condensed might be called "discouragingly uncertain," in every case of a specific nature.

Notwithstanding this, the last few years have added much to the therapy of the urologist. It is merely with a view to giving a short summary of the most valuable of these (as determined by our own results), that this paper is undertaken; not to claim anything original.

The reason we have not touched on the subjects of pathology, diagnosis, or anatomy is that you all have that part of the subject at your disposal in every text book. Empiricism is one of the most powerful therapeutic guides, and we feel that a clear report on something we have tried and found good, is worth more than volumes of scientific theorizing.

For convenience urethral discharges may be divided into two great classes—the specific and the non-specific. By the non-specific we refer to those cases (which form a very small percentage of the condition), in which the gonococcus is not the etiologic factor, and by the specific we refer to those cases whose name is legion, in which the diplococcus of Neisser is demonstrated.

Taking the non-specific forms first, as they are both less common and more responsive to treatment, we can divide them according to the etiological factor, into simple urethrorrhea, in which so far as we can determine there are no local lesions; erythismic due to repeated excessive coition or prolonged ungratified sexual excitement.

Traumatic urethritis. Irritative urethritis, such as we find following the ingestion of certain drugs and food, or in certain diathetic conditions with irritating urine, as in gouty and rheumatic cases.

Eruptive urethritis occurring coincident with certain acute exanthemata.

Concomitant urethritis due to disease of para and periurethral structures. Simple urethrorrhea is a condition due to a relaxed and leaky mucous membrane and represents an excessive quantity of what is in character a normal secretion. This occurs as a result of general physical depravity, such as follows acute exhausting diseases like typhoid, scarlet fever, etc., and the observer will have no difficulty in recognizing it. The treatment is obvious.

The treatment of the traumatic variety is first prophylactic—e. g. use septic instruments, and use them skillfully, and precede their use with thorough cleansing of the glans and by antiseptic flushings. In the acute stage the most that can be done is to put the patient to bed and order hot sitz baths, diluents per orem, rectal suppositories of opium, eucaine and adrenalin instillations, and in a comparatively short time the condition is under control. Hexamethyline tetramine in 7½ gr. doses is valuable.

The irritative urethritis if due to the ingestion of substances known to be irritants to the urinary tract will usually subside under liberal doses of water and avoidance of the ingestion of the same or similar drugs or foods again.

The rheumatic and gouty cases will clear up as the internist succeeds or fails in the therapeusis of the general disease.

The erethysmic variety forms quite a large percentage of the many male sexual incompetents who flock to the charlatans after reading the wonders accomplished by the said gentlemen, in the daily press, and at another time we hope to present some end results in the treatment of this class of cases, but as yet we are not complete in our records.

The internal treatment is mainly systemic, to be supplemented with the judicious use of the cold sound, urethral-psychophore, the latter especially if the urethroscope shows a turgescence and flaccidity of the region of the verumontanum. Exercise, hydrotherapy, diet and avoidance of excesses or long continued sexual excitement, are all to be remembered.

The eruptive and herpetic forms if recognized will be found to be self limited as a rule.

The treatment of the concominant form including folliculitis, prostatitis, vasitis, seminal-vesiculitis and systitis is in the great majority of cases that of a deep-seated gonorrhea, as most of these deep inflammatory conditions come after a gonococcic infection, and therefore we will refer to them under that head.

Coming at last to specific urethritis, the subject is so extensive that we must of necessity divide the treatment into periods of time and into subdivisions depending on the region of the urethra involved.

First as to prophylactic treatment. We have a small series of cases in which there was exposure to undoubted gonococcic infection, and in which the employment of a thorough external cleansing with bichloride, 1 in 5000, followed by injection into the anterior urethra of a 20 per cent. argyrol solution retaining same for about 5 minutes, has so far proven effective, and save for the chemical

* Read at meeting of San Diego County Medical Society, April 4, 1912.

discharge induced for a few hours following the injection, does no harm to the patient. Of course the diplococcus was not obtained from the urethra of any of these cases, but circumstantial evidence pointed to a specific vaginitis existing in the woman cohabited with and other men were infected from the same source. The prophylactic treatment to be effective must be employed very early, within 24 hours, and better within 12 hours, after a suspicious intercourse. The U. S. Army has been for some time using this method with very excellent results.

The treatment of urethral discharge of a specific nature, is divided into two great heads. The acute and the chronic cases, and by acute we do not refer to any particular time limit of the disease but to that stage which may be termed the florid, when the symptoms are more or less violent in character, and by chronic we refer to cases which have after a lapse of a few weeks passed into that stage where there is the symptom of urethrorrhea without much of any subjective symptoms otherwise; in other words, when the inflammatory condition has subsided and all we have is a so-called gleet. Furthermore, the disease is divisible into two other classes dependent on the anatomical region involved; e. g., anterior and posterior urethritis, of course, acute and chronic.

There are in addition the complications which often attend any of the aforesaid types of urethritis, e. g., periurethral abscess, prostatitis, seminal-vesiculitis, epididymitis, etc., of which we will speak separately. In acute anterior urethritis we have divided the treatment arbitrarily into two stages, which might be called the hyper-florid, or earliest stage, and the florid, when although the symptoms have abated under proper treatment they are yet acute.

The hyper-florid has in our hands responded well to the following routine management. The patient is given an alkaline mixture, usually potassi bicarbonitis gr., 10 with fl. ext. hyoscyamus M. 10 in water every 3 hours for at least two days. This controls ardor urinae and gives prompt relief from much discomfort due to an acid urine. In addition his urethra is irrigated if possible three times daily with sol. boric acid sat., at about 100°, using at each sitting at least two quarts, and merely rinsing the anterior canal, and that very carefully, for the use of much pressure on the urethral wall at this time not only is extremely painful but is productive of much subsequent harm in our experience. (May produce a posterior urethritis and periurethral abscess.)

The Valentine irrigator is an excellent apparatus to carry out this treatment and the elevation of the percolator should be only a few inches above the level of the patient's pelvis. The stream of fluid should be allowed free egress from the urethra at this stage. By the end of 24 to 36 hours under this treatment the conditions usually have cleared up wonderfully and a change can be instituted with a view to employing agents if anything more in the line of gonococcicides, but if there is any delay in getting a response we continue our repeated irrigations, only substituting weak solutions of potass. perman. and always using them very hot and plentifully. We have obtained better results in all urethral treatments to have the patient in a reclining posture.

The florid stage of acute anterior urethritis is where more care must be observed in treatment than in any other class of case, because here we can do too much or too little and spoil the chances for a prompt recovery or lay the foundation for an easy extension of the disease unless we are constantly on the watch. If possible the patient is instructed to appear for treatment twice daily in the morning and evening, if he is unable to come in the morning he is instructed in the use of the small urethral syringe so that he can carry that part of the treatment out himself.

After rinsing the urethra with hot boric acid sol., we instill by means of a No. 12 F soft catheter introduced up to the triangular ligament (we cut the catheter off at the right length and have it attached to a Gouyon syringe) enough half-of-one per cent. solution silver nitrate to fill the anterior urethra and allow it to escape immediately. This constitutes the morning seance. If the patient is unable to appear he is given instead of silver nitrate a 10% sol. of argyrol or a 3% of protargol, and instructed to urinate first, then eject 2 drams of the solution into the urethra, retaining same for about 5 minutes.

At night the anterior urethra is irrigated with large quantities of hot permanganate sol., the exact strength being an unnecessary item so long as the color approximates port wine. This is slightly astrigent and is a comfort producer, and at the same time limits the amount of nocturnal discharge. Under this care the two-glass test will show a progressive lessening turbidity, in favorable cases, and the smears will begin to grow less demonstrative of the character of the infection. The patient, however, is not much interested in the scientific element of the disease and always points the finger of scorn at that everlasting drop, so that we have taken the diminution of the discharge as the most satisfactory routine check on treatment and only in special cases do we make regular weekly smears. The two-glass test is the best way to determine the amount of material in the urethra so that each case is educated to come with urine in the bladder and immediately passes this into the glasses on entering the treatment room.

In the course of a few days—or weeks—(the time, as you all know, being variable), the discharge as such stops, or instead we find the gutte-militaire, and here our treatment of the first stage ends. During the acute stage just passed there is one important point often overlooked, and that is the thorough instruction of the patient in regard to personal hygiene, and especially attention to the intestinal tract. We have as a rule insisted on a daily evacuation of the bowels aided where necessary by a gentle laxative, diet free from condiments as possible, rest, regular hours, abstinence from alcohol and sexual excitement. Tobacco we have found rather beneficial than harmful and never stop its use, though we never have prescribed its use to non-smokers. For the

painful erections of this period we usually advise the application of a very hot towel to the perineum and external genitalia. When the posterior urethra has become involved we have in the acute stage a very serious condition facing us and promptness and caution are here the requisites for success. Here symptomatic relief is absolutely indicated. For the dysuria and frequent desire and other deep urethral symptoms we have found nothing so serviceable as a formula something like the following, varying of course with the individual case:

℞ Chloral hydrat Gr. 8.
Potass. Bicarb. Gr. 10.
Potass. Bromid. Gr. 5.
Ext. Hyoscyamus M10.
Glycerine.
Aqua AA.Q.S.

M. One such dose every four hours.

As soon as relief is obtained we follow with 7½ gram doses of hexamethylene tetramine every 4 to 5 hours for a day or two, which seems to have an inhibiting action on the process. The patient is ordered to bed if feasible, and a suspensory bandage is fitted at once. A purge of calomel followed by a hot rectal enema is beneficial. The diet is light and bland and now if never before the patient is taught how to acquire the cold water habit, large draughts of water being ordered just as often as the patient will take them.

Nothing is done in the way of local treatment till relief from severe dysuria is obtained, then after irrigating the anterior urethra with boric acid solution, hot, a No. 12 F. soft rubber catheter is passed just beyond the shut off muscle and the posterior urethra and bladder are thoroughly rinsed with the same solution running from the Valentine irrigator through the catheter, following which a weak solution of protargol (2% or 3%) is instilled into the deep urethra with a Guyon syringe and the catheter then slowly withdrawn, allowing a stream of the solution to fill the anterior urethra. This latter is held in by a clamp or the fingers for about 3 minutes. This treatment is repeated once or twice daily according to the manner in which the patient tolerates it, gradually increasing the strength of the solution till a 5% to 10% solution is being used. The guide relied upon to control our treatment in regard to the frequency and strength of injections has been the cessation of subjective symptoms and lessening of turbidity in the glasses used as described for the two-glass test.

If the second glass clears up progressively, no aggravation of subjective symptoms, the indications are for an increase, cautiously, in the strength of the agents named.

If there is any increase in discomfort, or the turbidity does not clear up as it should, the next best thing seems to be to decrease the per cent. of silver used. As some individuals do not seem to tolerate protargol well we have used argyrol in strengths varying from 5% in the beginning to 25% or 30% towards the close of the deep urethral medication. For a time we used silver nitrate solutions, very weak, but in the acute form of deep urethritis we have discontinued using this salt owing to the severe reaction following same, and the results obtained with the albuminous preparations seem just as certain. As deep inflammation subsides the discharge from the anterior segment of the canal generally increases, as shown by inspection of the first glass, in the two-glass test. (Here as a digression we might mention the value of a thorough and gentle rinsing of the anterior urethra with boric acid solution prior to employing the two-glass test, thereby removing all debris and showing exactly and without question the deep urethral contents. The washings contain the debris from the anterior portion, and if caught in a glass are of some interest.)

Ordinarily if the methods described are carefully applied to the cases presenting for treatment during the acute stage of the disease, in the course of from three to eight weeks there will be a cessation of purulent discharge, smears will be negative as to the diploccoccus of Neisser, and there will be nothing to show that such an infection existed but a slight stickiness of the lips of the meatus in the mornings, or a drop of germ-free discharge at odd times, and the presence of urethral threads and flakes in the urine. At this time the use of astringent injections of zinc sulphate are valuable, supplemented with occasional irrigations of hot permanganate of potash, of a strength which gives a color much deeper than port wine. During the declining stages the internal use of oil of santal is believed by us to aid in toning us the urethra, and combined with salol is given in capsules 3 or 4 times daily, as the condition of the stomach indicates. In a few days this can be stopped and the patient instructed to present for examination once a week for a time. He should be cautioned not to milk the urethra in the fond hope of eliciting another drop of pus as this will often by mechanical irritation produce a slight mucoid discharge very much to the mental unrest of the patient. All that is indicated now is watchfulness, to be sure that the infection is no more, and we are in the habit of allowing a few glasses of beer occasionally, which in the event of a latent infection being present, will rejuvenate the cocci, and we have a relapse, when the treatment is followed again till we feel sure the case is cured.

One of us (Loos) has used with great satisfaction and very uniform results in those cases which have passed the florid stage either anterior or posterior (and prior to the vaccine therapy it was considered about as good a method of local medication as to be found), and consists of the thorough cleansing of the anterior urethra, followed by the posterior with boric acid solution and then filling the bladder with 1 in 8000 bichloride of mercury solution by means of a No. 12 F. soft catheter, then withdrawing the catheter, and allowing the patient to void the contents of the viscus, after which another well lubricated catheter is passed and the bladder again filled, this time with a saturated solution of boric acid, and patient allowed to evacuate same immediately, thus wash-

ing away any excess of mercury, and preventing any unnecessary reaction.

Many are interested in the time limit for a cure of anterior and posterior urethritis, and though figures have been quoted, and we have tried to estimate the average, the cases present such a varied resistance to the infection, and respond so differently to the same treatment, that we have not as yet determined a reasonable time to figure on. We believe, however, that excluding all cases with complications the average time consumed in the cure of cases of combined anterior and posterior urethritis to be in our experience about six to ten weeks.

Again as a digression from the real topic we are handling to-night we would say that after a period of apparent cure lasting three months has elapsed we try to have the case present for the purpose of prostatic and vesicular massage and microscopical examination of the fluid expressed, followed by instillation of a 4% silver nitrate solution into the deep urethra, and examination of smear of silver discharge. This has seemed rational even in the apparent absence of a complicating prostatis or seminal-vesiculitis. If this is also negative we are prepared to allow marriage.

In speaking of the time consumed in the cure of acute urethritis we referred to the small per cent. of such cases that will respond to chemical treatment. In our experience the large majority of posterior cases run into the chronic stage and God only knows how long it will take to cure them by chemical agents or whether they would ever get well.

It seems best to take up the treatment of the chronic cases next, including all such as have a persistent discharge or morning drop for an extended time after having had the usual methods of treatment, or as is very common in our series, having used the various nostrums on the market till out of patience. Here we have two agents in addition to the occasional hot irrigations that are beyond compare in our estimation: viz., vaccines and silver nitrate. The moment a case passes into the chronic stage and before we commence using the vaccine he needs, and after quite a lot of very satisfactory experience we believe that 99 cases out of 100 need the same vaccine, e. g., one composed of a mixture of gonococci staphylococci and bacillus coli, and this is what we have been using for some time with fairly uniform results. In the administration with the vaccines we have used chiefly the Cutter mixed gonorrhea vaccine as obtained on the market, and in a small number of recent cases a composite vaccine made by Dr. Thompson from urethral discharges of a number of active cases, and containing approximately the same number of organisms per cubic C. C. The first dose given is from 50 to 100 million, usually in the arm, subcutaneously, after iodin and alcohol sterilization of the skin. If there does not follow a severe negative reaction we can usually follow in from five to seven days with 100 to 200 million. Subsequent doses and frequency of repetition are dependent purely upon the clinical picture. We never give another of vaccine when there is any question as to the overlapping of negative phases so to speak, and dosage is increased very cautiously, sometimes several injections are given of the same sized dose, if there seems to be a sharp reaction to that dose, but in the course of time we arrive at the dose of 500 million, and is the final dose given in that case if the cure is not complete, till a lapse of a month, when we start over again and repeat the same routine. By negative phase in this line of work, we have reference to the following symptoms which are in our experience the only ones of importance; increase in urethral discharge, for a few hours or a day or two, feverishness and malaise with bone pains, simulating la grippe, lasting a few hours, and headache of a dull character, the last usually not lasting over three or four hours. All these have developed within the first 24 hours following vaccine injection, and are named in the order of their frequency. Most cases only show the first named, that is, increase in discharge for a time. We consider the positive phase to be the next succeeding few days when the above symptoms remit, or disappear, and the correct time to give the next dose of vaccine seems to be when the patient feels the most encouraged by absence of discomfort either absolute or relative, and this will be as a general rule about five to seven days from the last dose in the beginning of vaccine treatment and about seven to twelve days later on. We have tried increasing the doses and reducing the time between doses without the results which follow our present method.

We have tried Schaeffer vaccine in only one case (Loos's) and were not impressed with the results, and this same case is now practically well after having received the ordinary vaccine.

One of us (Loos) has a small series of cases that the stock vaccines failed on, and in these an autogenous vaccine promptly brought about a cure. While we have spoken of vaccine therapy as if we depended entirely upon it for a cure, this is not the case, and we feel that we cannot let go of the old rational methods of local treatment till the vaccine treatment has become better understood.

To give a brief description of our methods of local care in chronic cases, during the first week of vaccine therapy we use nothing but either boric acid or permanganate irrigations so that we can observe the effects of the vaccine more readily. The patient after having his anterior and posterior urethra thoroughly rinsed has the bladder filled with the solution selected and voids voluntarily. After the first week we give daily treatments with silver nitrate solution as follows: In each case there is first a thorough irrigation with hot boric solution. Then through a Gouyon olivary tip silk catheter is instilled a few drops of ½ of 1% solution. This is repeated each night till tolerance is established for that strength, when a 1% is used. Then 2.3.4.5% follow. The silver discharge produced is examined for gonococci at frequent intervals and when apparently sterile, warm sounds are introduced after irrigation, to empty

the urethral glands. This is immediately followed by silver. If the morning drop is persistent after a course of silver up to 5%, we commence with ½% again and run up slowly as before. We have found the use of varying strengths of silver productive of better results than the dependence on any one, and this salt in the chronic stage seems to give better results than the albuminates, possibly owing to its more astringent properties.

After say one or two courses of silver and vaccine as described, the patient will usually be fairly free from subjective symptoms, exhibiting practically only a chemical urethrorrhea. We then omit local treatment save once a week more or less, and then use a reasonably strong silver solution instillation as a sort of urethral "harrow." By the time the patient is getting large doses of vaccine, we are ready to entirely discontinue urethral medication, even if the case is not showing evidences of a cure, which in properly selected cases, i. e., not acute, is a small percentage since the advent of vaccine therapy. In this event we pause an appropriate time with an occasional irrigation, and commence once more as in the first described method. So far we have not failed to get what we consider a cure in all those cases we have treated ourselves from the time of infection.

The complications of urethritis anterior and posterior which most commonly are met with and of which we will speak briefly relative to treatment are, periurethral abscess, prostatitis, seminal-vesiculitis, epididymitis, orchitis, cystitis, and rheumatism.

Briefly the most successful treatment of them one and all is the same, namely, the vaccines as soon as the florid stage is passed. Periurethral abscesses formerly surgically treated by us are now clearing up nicely under vaccines. In nearly every case of periurethral abscess operated upon by us, while the original condition was cured a urinary fistula remained which necessitated a secondary operation to cure the fistula. Acute prostatitis and vesiculitis calls for symptomatic relief in the way of rectal suppositories of opium, hot enemata, diuretics, preferably alkaline, and great patience to await the stage of resolution. When the chronic stage arrives, in addition to the treatment before described under posterior urethritis, we use prostatic massage twice a week prior to the patient voiding his urine. The same remarks apply to the seminal vesicles. In one very severe case of seminal vesiculitis one of us (Loos) in addition did a double vasectomy, and with a small needle introduced into the vesical end of the vas, irrigated the vesicles daily with argyrol solution 10%, eventually getting a cure.

Epididymitis and orchitis are to be treated by rest, elevation and heat or ice in the acute stage, with also, as in nearly all complications of urethritis, a cessation of local treatment to the urethra pro tem. Opiates as needed to produce comfort are certainly indicated. Frequently here we must resort to surgery to liberate pus—and a plain incision, *low* to allow good drainage is our choice. Later, as before stated, the vaccines seem to act magically on these cases.

Gonorrheal rheumatism has given us more annoyance than any of the other complications of specific urethritis, and not till we had the vaccines did we feel sure that we could get results in their treatment. The cardinal points to be remembered here are, rest in bed, liquid diet, temporary cessation of urethral local applications, aspirin internally, unguentum methyl-salicylate compound to the affected joints, with hot applications or ice, whichever gives most comfort, and after the first few days the vaccine indicated by the urethral infection.

The Bier bandage, applied for half hour intervals, daily, is of the greatest help in clearing up the articular condition. To obtain the best results from this method of treatment it is better for the attending physician, or a well instructed nurse, to apply the bandage, because the object desired is a venous congestion, which must be severe enough by causing the venous stasis and yet should the bandage be applied too tightly, the arteries also are occluded and we thwart our purpose. The arterial pulse must always be palpable at a point distal to the site of the bandage. The patient is unable to determine these precautions himself.

Since the interesting and instructive paper read last meeting by Dr. Clark the advisability of further reference to the prostate and seminal vesicles seems advisable.

In the adenomatous enlargement he referred to he advised against massage and spoke of the possible hastening by such an ill-advised treatment of fibrosis in the gland, thus further adding to urethral occlusion by pressure. This is not to be confused with the condition we here deal with, viz., an infection and more or less acute inflammation of the gland or vesicles. It is imperative that we aid in the expulsion of effete material from the deep recesses of these parts, and in massage we have a very fairly reliable method of emptying out a certain amount of infective material and at the same time aiding in absorption of other matter out of place, and in this type of case not only does the smear prove the expression to be of an infective nature, but those cases well handled with a combination of massage and instillation, and vaccines give better and more lasting results than those treated without massage. There is less danger, in other words, of the retention of infection, or, as we hear it called, "latent infection."

THE TREATMENT OF SPINAL CURVATURE.*

By JAMES T. WATKINS, M. D., San Francisco.

No group of cases have proved more baffling both to the general practitioner and the orthopedic specialist than have the various types of so-called spinal curvature. The history of the struggle that medical men have, from earliest times, waged with this group of disorders, is replete with interest and throws no little light upon the difficulties which beset those who would attempt to combat them.

That the Greeks recognized spinal curvature

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and attempted to correct it is set forth with sufficient clearness in the writings of Hippocrates. One cannot be absolutely certain, however, that they differentiated between spinal curvature and tuberculosis of the spine; that is, between scoliosis and true spondylitis. Both conditions they attempted to treat by forcibly correcting the deformity and subsequently strapping the patient upon a board.

During the Dark Ages, orthopedics would appear to have suffered an eclipse. It was indeed a lost art. A majority of the jesters, without one or more of whom no court, nor noble's, nor franklin's household was complete, were almost certainly scoliotics. At a later date you will recall that Shakespeare lays great emphasis upon the high shoulder and hunchback of Richard III. Here, too, we are dealing with a manifestation of scoliosis. I might say by way of parenthesis that Shakespeare wrote this at a moment when the reigning house, that of Tudor, was one whose founder had overthrown the last Plantagenet and the playwright was naturally disposed to make as much as possible of the latter's defects. Contemporary historians, on the other hand, represent Richard and his elder brother Edward IV as being men of a more than goodly presence.

In America the first reference to the treatment, or better, the prevention of spinal curvature, appears in the accounts we have of the method of caring for boarding school girls a hundred years ago. There are doubtless among my hearers, those who will recall grandmothers or grandaunts who always sat rigidly erect, disdaining the support of a chairback. My own grandmother has often told me how she and her schoolmates were required to sit or stand with their backs strapped to boards, so many hours a day, in order that they might conform to the then ideals of maidenly symmetry. Speaking from memory, I might quote to you that stanza from Dr. Oliver Wendell Holmes's "Verses to My Aunt":

"They strapped her back against a board,
To make her straight and tall,
They pinched her toes, they starved her down,
To make her light and small."

Except for some exceedingly astute observations of Bigelow, which passed unnoticed, we have record of nothing definite in the study or treatment of Scoliosis, until the elder Sayer introduced his plaster of paris corset in the late seventies. The use of plaster of paris as employed by Dr. Sayer may be said to have worked a reform in all branches of orthopedic surgery. Shortly after this —I shall not cumber your minds with dates— Adolph Lorenz, working in the vast pathological laboratories of the Allgemeinenkrankenhaus at Vienna, described, first the anatomy of scoliosis and evolved, by logical deduction, a system of exercises calculated to combat the development of this deformity. Adolph Lorenz's teacher,—Albert, —subsequently described further changes in the anatomy. With these studies in mind, Wolff of Berlin, shortly afterward evolved his now famous "law of the transformation of bone." Before stating this law I would remind you of what Meyer, the mathematician of Zurich, pointed out nearly a century ago; namely, that a bone presents in its internal architecture that construction which best fits it to support the strains and thrusts to which its function subjects it. Wolff showed that any change in the configuration of that bone will result in a re-arrangement of its internal architecture to enable it again to best meet the requirements made of it in its changed condition.

All of these writers employed practically the same methods of treatment which Lorenz had made popular. Next Schulthess of Zurich took up the study and scientific treatment of spinal curvature. To this end he devised a series of exercising machines which were, however, too complex and too costly to be practicable. If my memory does not fail me, he had spent some $50,000 in building the machines which were actively in use in his clinic when I was with him. Throughout Germany, Sweden and Austria, the mechano-therapeutic institutes provided with the various forms of resistance apparatus devised by Zander and by Hertz found their greatest activity in the treatment of spinal curvature.

In France, Redard perhaps more than any other, has applied himself in this field and has advocated a system of forcible correction, with the patient in the prone position. Since I shall not touch on it again, I will say in passing, that with the patient lying face downward upon the table and under complete anesthesia, Redard makes traction by means of screw swivels on head and feet and at the same time attempts to correct the prominent ribs behind by means of a paddle-shaped lever. This, after being hooked by one end to the side of the table, is forced downward upon the prominent bones.

The Englishmen have written comparatively little and accomplished less in the treatment of scoliosis. Bernard Roth has devised a series of exercises and Jackson Clark a brace, all of them with view to correcting spinal deviations. They are in no way remarkable.

In this country a number of orthopedic specialists have devoted time and study to the problems presented by spinal curvature and the sum total of their results is by no means insignificant. Among others Truslow and Teschner have evolved systems of corrective gymnastics, Teschner's system of forced exercises being particularly interesting, while Bradford, Souter, Feiss, Hoke, and especially Lovett, have made many contributions to the literature of spinal curvature.

Finally, Lange, of Munich, has devised a particularly interesting and simple system of mechano-therapeutic apparatus for specialized resistance exercises, and Wullstein of Halle, has constructed an apparatus which I shall presently illustrate to you. In this machine all the elements which unite to make a spinal curvature can be reversed and the body held in this reversed position while a retentive plaster of paris cast is being applied.

(To be continued in June, 1912.)

. HYDRONEPHROSIS.*

Dr. M. Krotoszyner reported a case of left-sided hydronephrosis in a man 41, who had suffered for the last few years from intermittent attacks of left-sided renal colic. The urine at times showed albumen, some pus cells and many hyalin and granular casts. The cystoscopical examination presented a normal bladder and upon ureteral examination the left renal secretion showed pus cells and casts. Functional tests showed only a slight deterioration of function on the left side. X-Ray plates were negative for stone-shadows. With these findings the diagnosis of unilateral nephritis seemed to be most plausible, while the differential diagnosis hovered between that and intermittent hydronephrosis of probably mechanical origin, crossing of ureter by aberrant renal vessel. A correct interpretation of the case was finally only possible by pyeolography. Pyeolography was made by means of a 25% solution of cargentos. The plate on the left side showed a large pelvis and below that a round, large shadow representing a cavity at the lower kidney-pole filled with cargentos solution. The patient experienced a quite severe local reaction from the injection of cargentos and voided dark urine for several days afterwards which, upon chemical examination, showed the presence of silver. Proceeding, therefore, from the supposition that the kidney still contained considerable amounts of cargentos a second pyeolography was performed five days after the first one without further injection of cargentos. The second picture showed a beautiful cast of the renal pelvis, calices and the lower-kidney pole permitting the exact recognition of pyo-hydronephrotic foci in the kidney. Upon removal of the kidney this diagnosis was confirmed and the cavities in the removed organ corresponded exactly with the shadows of the second plate.

The patient made an uneventful recovery.

CASE REPORTS.*

DR. HENRY J. KREUTZMANN.

Case No. 1. Large Gallstone. Woman of 64 years, mother of a number of children, always been in good health. One and a half years ago was taken with severe colic pains all over the abdomen, obstruction of bowels, vomiting; no physician in attendance; upon resort to different purgatives bowels moved freely and she was relieved. Has been in good health since until a short time ago when she was again seized with colic pains, obstruction of bowels and vomiting; finding no relief from her own agencies I was called. Abdomen was very large, fat, not painful to touch anywhere. There was no rise of temperature, pulse good. Bowels not entirely closed. When her condition did not improve and the possibility of operative interference had to be discussed, Dr. Conrad Weil was called in consultation. No resort to operation as yet was considered advisable. Next day the nurse in giving a high enema came upon a very hard body in the rectum, which she was able to work out. Dr. Weil says it is a large gallstone, filling out the entire lumen of the bladder, which through usure had worked itself into the intestinal tract.

Case No. 2. Large koprolith, simulating fibromyoma uteri. A young woman from the country was sent to the German Hospital supposedly suffering from a large fibromyomata uteri. Dr. Draper put her under ether for examination and at that time I saw her first. Her previous history was that she had no hemorrhage, but had noticed an enlargement of her abdomen; bowels difficult to move; on one or two occasions she had appendical affection. The abdomen was enlarged, enlargement due to a spherical, hard, slightly movable mass, filling out abdomen, reaching above midway between symphysis pubis and navel, situated mostly in left side, emanating apparently from the left side of fundus uteri, uterus pressed down and backward. The diagnosis of fibromyoma uteri seemed almost established; as a matter of habit after the vaginal examination I put a cover over my left index finger and introduced it into the rectum. I felt a hard mass, was able to remove a little of it; then with plenty of warm water the whole "tumor" was either dissolved or softened and dislodged into the pail. Care was taken for the next few days to have the bowels freely moved. Then some time afterwards finding the uterus still low and retroverted and on account of the attacks of appendicitis we decided to operate. We performed what I take the liberty to call "Kreutzmann's operation," transverse division of the skin (Küstner) and combination of abdominal work (removal of appendix in our case) with extra inguinal shortening of the round ligaments after Alexander. We found the colon and sigmoid enormously enlarged, but no sacculation; all the layers of the intestinal wall taking part in the thickening. Later reports are to the effect that the woman remains well. Dr. Terry reported a year ago some similar cases; this is the first of such large accumulation of feces in my practice.

Cases No. 3 and No. 4. Two cases of ectopic pregnancy. Both women presented typical cases; young women, 1 child, then an attack of pelvic affection, invalidating them for some time, no pregnancy for 6-8 years, then again pregnancy. In the first case the woman was seized with severe pains in right side and slight collapse. Her physician diagnosed ruptured tubal pregnancy and sent her to the German Hospital. I saw her late in the night; no signs of collapse any more, slight pain only; a hard spherical mass on right side of uterus could be distinctly made out. My diagnosis was ovarian kystoma with twisted pedicle, possibly uterine pregnancy. When the abdomen was opened the next day the right tube was found the seat of a pregnancy, fetus found, tube ruptured, slight hemorrhage in abdominal cavity, besides an ovarian kystoma the size of a small orange with long twisted pedicle was found. This case is reported for its extreme rarity. Removal of right adnexa and uninterrupted recovery.

In the second case the first collapse occurred same afternoon, patient of Dr. Max Salomon. The diagnosis seemed well founded merely from the history of her general condition. Woman extremely nervous and sensitive, impossible to make any physical examination. Advice given to go to a hospital, not accepted until next day, when she entered the German Hospital. By that time pain and collapse had entirely ceased; in a few days she went home again. Just two weeks later another attack, more severe this time; the same delay to enter the hospital and much objection to operation. Finally almost in articulo mortis operation performed. Left tube the seat of a pregnancy, ruptured, still bleeding, the abdomen full of blood. Left adnexa removed; recovery. This case is reported merely to show the difficulty under which so much of our work has to be done. It sounds very good to say "Operate when you have a ruptured, bleeding tubal pregnancy." But if the patient or her people do not accept our advice? To give up the case means only to turn it over to some one eager to get a hold of it. We have to take the chances, but cases of this sort demonstrate the necessity of the spirit of solidarity amongst practitioners—alas lacking in so many!

* Reported at the Meeting of the Surgical Section of the San Francisco County Medical Society, March 19th, 1912.

* Read before the Section on Surgery of the San Francisco County Medical Society, March 19th, 1912.

FATAL CASE OF SYPHILITIC MYELITIS AFTER INTRAMUSCULAR INJECTION OF SALVARSAN.*

By VICTOR G. VECKI, M. D., San Francisco.

A clerk in a tobacco factory, aged 23 years, sullen, taciturn, and inclined to make misleading and contradictory statements, consulted me in January, 1910, for, what he called, a stubborn case of gonorrhea. Casually he showed me on February 12 a furuncle on his left forearm. Several boils developed in succession, but yielded rapidly to proper treatment.

March 24th when treating a beginning boil I discovered a syphilide and began to question the patient, who denied all knowledge of luetic infection; though, as was found out subsequently, he received at the hands of Dr. Zussman of San Francisco, in 1908, from June 1st to Sept. 3rd, intramuscular injections of sublimate for a syphilitic roseola that followed a typical indurated ulcer.

In spite of his denial I made the patient strip, found the characteristic scar of the primary infection, and of faucial involoment, ample adenitis, and unmistakable skin symptoms. The patient was not surprised when told that he must be treated for syphilis, and received at first six daily intramuscular injections of sublimate, and when he claimed inability to visit the office every day I gave him, on April 16th and 21st, each time an intramuscular injection of salicylic mercury. The patient, who led a somewhat strenuous night-life, and while not exactly an alcoholic, would, at occasions, and when in congenial company, take any kind of a liquid refreshment, became slightly salivated, was given a mouthwash and kalium iodatum internally, and advised to return for treatment as soon as the gingivitis subsided. He did not return until May 30, 1911.

It was found out later that he consulted Dr. Zussman in February of the same year and was advised to have an injection of 606.

When he came to me May 30th, he had, with the exception of swollen glands, no active symptoms of syphilis, but it is to be presumed that he must have felt some spinal symptoms, because so careless a young man would not have bothered with latent syphilis. In my mind there was no doubt whatever that this patient was in great need of anti-luetic treatment. In fact, I considered that in his case salvarsan was especially indicated, considering the previously experienced low tolerance of mercury.

The patient went to the hospital, and June 10th at noon 0.30 of salvarsan were injected in each side of the gluteal region. There was no reaction of any kind noticeable.

Absolute well-being prevailed the following day, no pain and no temperature. Both the nights spent at the hospital the patient slept soundly. He was eager to leave bed and the hospital.

Though told to await my visit, he left the hospital June 12th at 6 a. m. When later asked why he did that he answered that he saw no reason why he should have staved any longer, and besides, that he did not like the breakfast at the hospital and preferred the coffee at a well-known down-town bakery.

He walked to the electric car and after breakfast lit a cigar, strolled around and went to his place of business at 9 o'clock.

All this day he performed his duties at the factory, and, as he related afterwards, felt no untoward symptoms. After having partaken of a hearty dinner at a relative's house he began to feel a peculiar numbness in his legs, and, thinking that he needed exercise took an hour's walk. When near his home he felt very tired and thought that he barely managed to drag himself upstairs. Then he felt the first time that the flow of his urine was impaired; was, however, of the opinion that the bladder was at that time emptied. Towards morning of June 13th he could not urinate at all, but felt great desire to do so. He dressed with difficulty and went to a physician in the neighborhood who catheterized him. The patient had great difficulty in returning to his home, greater difficulty in undressing himself, and began to drag his legs. An ambulance was sent for, and the young man, now decidedly paraplegic, returned to the hospital. Temperature 98°, pulse 76, respiration 22. Complete retention of urine; patient was catheterized, given a high soapsuds enema, and, under the impression that the intramuscular injection was to be blamed in some mysterious way, hot compresses to the buttocks were ordered, though the patient did not complain about any pain. Sensitiveness greatly diminished from the navel downwards, motility limited to a penible lifting of the legs and moving of the toes.

June 14: Temperature 99.6° to 100.4, hemiplegia complete in every respect.

June 15: Temperature normal to 99°, Dr. Krotoszyner called into consultation, ordered electric baths, ice-bag to the head and hot-water bag to the feet.

June 16: Sensibility of the stricken area improved, motility of the toes perceptible. Temperature 100.2° to 100.8°.

June 17: Temperature 98.6° to 101°. Patient is morose, but claims that he has felt no pain anywhere at any time since the salvarsan injection.

June 20: Patient has no control of his sphincters and involuntary defecations start; still has to be regularly catheterized. Slight improvement of sensibility.

June 22: Feels better, voluntary moving of toes perceptible, but clonic spasmodic movements of the toes whenever patient succeeded in moving them.

June 23: Drs. Albert Abrams and Krotoszyner were called into consultation. It was clear to all consultants that arsenic could have no bearing upon the patient's condition. Inunctions of unguentum hydrargiri cinereum and large doses of kalium iodatum were ordered.

June 24: Another consultation with Drs. Newmark and Krotoszyner. Same conclusions. Reflexes that were missing before have returned partially.

June 25: Decubitus started, and made from this day most rapid progress. Temperature 103.8°.

June 27: Inunctions had to be discontinued as patient refused them, doses of kalium iodatum were increased. Temperature continually over 102°.

June 28: Decubitus spreading most rapidly in spite of close attention and proper treatment. Patient was suspended for three hours.

June 29: Top of right big and third toe show black discoloring; patient feels cold. Temperature 100.8° to 102.4°.

June 30: Feeling in legs better, moving of toes perceptible. Temperature 103.2°. Patient shows decided euphory, inunctions resumed.

July 1: Sensibility constantly improving, temperature to 101.6°, decubitus spreading and deepening in spite of suspensions, peroxide, aristol, stearate of zinc, etc.

July 3: Involuntary passing of urine begins. Suspensions gradually prolonged, temperature lower.

July 6: Patient constantly improving, temperature lower, suspensions continued.

July 13: After a consultation with Drs. Newmark and Krotoszyner prolonged hot baths were ordered.

July 14: After a severe and prolonged chill temperature rose to 104°, patient refuses inunctions.

July 16: Inunctions resumed, patient's general condition and feeling improved.

July 18: Feels very bad, constant cold sweats very annoying. Decubitus deepening, large, ill-smelling seepage. Patient passed 120 cc. into urinal Inunctions discontinued.

*Read before the Urological Section of the San Francisco County Medical Society, December 5, 1911.

July 19: Drs. Newmark and Krotoszyner in consultation. Sensibility on left side to the navel, right side to the lower border of the seventh rib. Patelar reflexes, left very feeble, right not preceptible. Double Babinski. Cold and heat felt on left side to below the navel, on right side just above the navel. At 6 p. m. I injected 0.6 salvarsan into the right arm intravenously. Temperature rose from 101° to 102°, the patient had 30 minutes later a severe chill that lasted 32 minutes.

July 20: Vomiting a large amount of stomach contents and yellowish fluid. Temperature 105.6°.

July 21: At 12:10 a. m. a chill lasting 26 minutes and so severe that pulse could not be taken. Temperature 99.8°; rose rapidly to 102.4°. Patient constantly chilly and nauseated. Jerking and twitching of the lower limbs begins, urine and stool continue to pass involuntarily, other conditions unchanged. Receives now three times a day 30 drops of the saturated solution of kalium iodatum.

July 22: Nauseated, refuses food.

July 23: Odor from sores very offensive. Temperature 103° to 104°. Veronal for sleeplessness.

July 24: Was able to pass 120 cc. of urine voluntarily. Refuses to be suspended. Wine of camphor used on decubitus sores, considerable seepage, very bad odor. Difficulty in keeping nurses increases.

July 25: Patient very drowsy. Most of the urine passes involuntarily, bladder at time of catheterizing almost empty; use of catheter discontinued.

July 26: Refuses all medication, but takes sulphonal at night. Temperature constantly between 103° and 104°. Patient presents a characteristic facies Hipocratica, refuses all food, but manages to pass 140 cc. of urine voluntarily.

July 28: Traces of albumen in urine.

July 29: Patient improves under stimulation by whiskey; appetite better.

July 30: Collapses again, a very annoying cough appears. Heroin given.

July 31: Odor unbearable, nurses have to be relieved frequently, large amount of pus from main sore.

Aug. 1: Dr. Krotoszyner in consultation advises that a regular Zittmann treatment be given, as he saw good results in most desperate cases. The bones in both hips are now exposed by decubitus. Temperature 100.4° to 100.8°. Cough can be controlled by heroin hypodermatically only.

Aug. 2: Zittmann decoction given lege artis. While hip is being dressed, the breaking of a small artery caused some bleeding until controlled by pressure. Patient very drowsy, almost comatose.

Aug. 4: Decubitus sores begin to dry up, look very dark.

Aug. 5: Patient improving, eats better, temperature lower. No change in paralysis.

Aug. 7: Drowsy and exhausted, wishes to be left alone. Sores bleeding at times.

Aug. 8: Unable to swallow the entire amount of the Zittmann decoction, coughing a great deal. Wine given upon request.

Aug. 10: Decubitus sores look exceedingly bad. Patient suffers and is given morphine hypodermatically. Temperature 100° to 103°, pulse 134, respiration 26.

Aug. 13: Slight improvement, appetite better, temperature 101°.

Aug. 15: Constantly dozing, refuses food, Zittmann discontinued.

Aug. 16: Dr. Krotoszyner in consultation suggests intravenous injections of sublimate, of which six altogether were given up to Aug. 21.

Aug. 18: Urine contains large amounts of albumen.

Aug. 19: Patient feels better and is very optimistic, slept well after 1-3 grain of morphine hypodermatically, appetite better.

Aug. 22: Very weak and tired. Hipocratic face reappears and is now very pronounced.

Aug. 23: Sores are almost dry, no seepage, very little odor. Temperature 101.6° to 102.6°.

Aug. 25: Pulse irregular and weak. At night hypodermic injections of ½ grain morphine with 1/60 grain of atropin relieves cough and gives rest.

Aug. 28: Pulse cannot be counted, temperature 98.2° to 98.4°, perspiring and coughing constantly. Asks for some medicine. Aqua laurocerasi with morphine given.

Aug. 29: Drowsy and weak, temperature 98.4°, pulse 104, respiration 16.

Involuntary urination and defecation continue to the end, which came on this day at 4:40 p. m.

Discussion.

Dr. Leo Newmark: Regarding Dr. Vecki's paper the question suggests itself as to what is the relation between the injection of the salvarsan and the affection of the spinal cord that ensued. The relationship of time seems to suggest connection between the two events. When I was called into consultation on this case, basing my opinion upon the literature on the subject, and upon the pleas made by Prof. Ehrlich, I decided that the young man would have gotten into this condition, only a little later, if he had not had salvarsan. Upon postmortem we found extensive softening of the cord; disease of the blood vessels was found in all parts of the cord, the cervical, dorsal and lumbar regions. Some of the blood vessels were so diseased that it was only with the greatest diffidence that we could identify them as blood vessels. We had Dr. Rusk examine them; he first thought they were blood vessels, then he thought they were not and then he gave it up. It was only after consulting Dr. Ophuls that we had sufficient confidence to identify them as such. It was beyond all reason to assume that salvarsan could have produced the condition of affairs we found anatomically. There is every reason to believe that syphilis did it in this case as we know syphilis can do it, and in a great many cases has done it.

Dr. Wm. Ophuls: I agree with Dr. Newmark absolutely in regard to the specific character of the lesions found and also in the statement that there is nothing at all that would indicate such lesions could possibly be due to arsenic in any form.

V. G. Vecki, M. D.: Of course, I am mighty glad that the unanimous verdict of all the consultants and of the gentlemen discussing this case is "not guilty."

In regard to the further use of salvarsan in my practice I must say, that, while I have never had trouble with any of my syphilitic patients before, and while the first disagreeable case I had was with this, my thirteenth intramuscular injection of salvarsan, I am not going to give up the use of this new, powerful and interesting remedy. The results are too good in most cases and the demand for salvarsan is, I am sure, going to increase until something "better yet" is found.

We know, however, that salvarsan does not displace mercury, and I personally impress my patients with the necessity of a thorough mercurial treatment in conjunction with the 606.

There can be no doubt that the young man under discussion died of luetic myelitis, and that Dr. Newmark is right when he says, that when such cases happen under, and in spite of mercurial treatment, we would not think of blaming it on to mercury; still I cannot help but think that this one patient was helped along in some way to his premature grave, and I cannot help but ask myself, "Why should such a fatal syphilitic condition begin just at the time when the patient is given a potent antisyphilitic remedy?" And I can answer myself only when I remember that my old teacher, the late Sigmund of Vienna, said that in syphilis everything is possible. Therefore we will see surprises with and without salvarsan, with and without mercury, and with and without Wassermann and Noguchi.

TONSILLECTOMY COMPLICATED BY POST-DIPHTHERITIC PARESIS.*

By J. J. KINGWELL, M. D., San Francisco.

Master C., 7 years old, was brought to me by his mother to have his tonsils removed. A week before this visit he had an attack of sore throat which was supposed by the mother to be tonsillitis, and was treated with home remedies. The tonsils were large, and the pillars hyperemic; otherwise the appearance of the throat was normal. As the mother gave a history of repeated attacks of sore throat, I performed a double tonsillectomy on the boy a week after his first visit. The operation went well, and no complications were noted; the tonsils were removed in their capsules, and the child went on to perfect recovery.

Nine days after the operation the patient began to regurgitate food through the nose, and the speech was impaired. Examination showed a paresis of the soft palate. The child was placed on strychnine, and is on the road to recovery.

This was evidently a paresis due to a streptococcic or diphtheritic infection which the boy had two weeks before the operation, and the tonsillectomy can in no way be blamed for it. A swab taken when the child was last seen proved negative.

LATE RESULT IN A CASE OF TRAUMATIC EPILEPSY.*

By ALFRED NEWMAN, M. D., San Francisco.

Walter Brown, operated Dec. 23rd, 1901, when 11 years of age, originally for depressed fracture of skull. Depressed bone removed. Dura opened, suspecting hemorrhage. Brain prune colored. Site of fracture the left parietal eminence.

Discharged Jan. 26th, 1902. Well except for hole in skull. Remained well for two years, when suddenly got convulsions. Mother says began on side opposite head injury. Have never seen patient in fits myself.

Von Bergman says that prognosis in these cases is inversely to time of appearance of fits after injury. However, as there are no hard and fast rules in treatment of disease, I determined to operate for the epilepsy.

Operation Jan. 30th, 1904, Mt. Zion Hospital. The scalp, dura and brain were all adherent. In separating dura the brain was considerably lacerated. As the dura was simply scar tissue it was trimmed off round to the normal membrane. This defect I covered with oil silk. The bone defect was covered with a perforated silver plate. Skin closed over all with silkworm gut drainage.

Wound healed well. Drain removed 3rd day, but the cerebral fluid collected under scalp and I foolishly reinserted the drain and as result got the wound infected. To make a long story short I had to remove plate and oil silk and the boy's convulsions continued with renewed force.

Despite large doses of bromide, 30 gr. t. i. d., the attacks continued until Feb., 1906, when I determined to put in another plate, a celluloid one this time.

Accordingly in the latter part of Feb. (17th), 1906, I inserted a celluloid plate 1-32 inch thick beneath the scalp, which as previously was adherent to brain, but the scar tissue that had reformed in the place of the dura was so massive and involved the brain to such an extent that I did not try to dissect it off. All I did then was to cover the bone defect after having separated the scalp. Closed the wound without drainage and let it remain closed despite enormous swelling from accumulation of cerebral fluid.

Patient made good recovery and left hospital in 4 weeks. For the next two years patient had fit after fit of the worst description ending up in a grand attack that lasted two days and one night in Dec., 1908.

Then for the next two years and three months has been entirely free from attacks. When on Mar. 12th, 1911, on a hot day while riding on the train he had an attack of petit mal lasting two or three seconds. (Suddenly stopped talking and stared straight ahead.) I must not forget to add that the mother of patient has looked after state of his bowels most carefully and that instead of bromides he has been getting Epsom salts.

To recapitulate—operated in Dec., 1901, for depressed fracture of skull; operated Jan., 1904, for resulting epilepsy. Fracture plate came out. Reoperated Feb. 17th, 1906, celluloid plate inserted. Success—but large amount of scar tissue left on brain. Then two years of repeated severe fits, ending up in a grand convulsion lasting 36 hours. Then absolute freedom from attacks till the present time, with exception of the one attack of petit mal. The only medicine taken during this time being mag. sulph. for bowels. Whether he remains cured or not time alone will tell.

The case is interesting, showing a surprisingly favorable result after an operation which scarcely warranted any hope of amelioration, to say nothing of cure. How to explain it is at present impossible.

In conclusion I shall say that if I had to do another operation of this sort I should repair the dura with a flap of fascia lata and close the bone defect with a bone periosteum graft taken from the skull.

* Demonstrated before Eye, Ear, Nose and Throat Section of the San Francisco County Medical Society, Feb. 27, 1912.

* Read before the Section on Surgery of the San Francisco County Medical Society, March 26th, 1912.

GIBBONS MEMORIAL.

To the Friends and Former Patients of Dr. Henry Gibbons, Jr.:

The Faculty and Alumni of Cooper Medical College have undertaken to establish a fitting memorial to the late Dr. Henry Gibbons, Jr. Dr. Gibbons was a man preeminent in his profession and a highly respected and public-spirited citizen. He served the City and County of San Francisco twice with distinction, on the Board of Health and on the Board of Education respectively. He devoted his life to the furtherance of Medical teaching, being Dean of Cooper Medical College for forty years. His great skill as a specialist in Obstetrics and Gynecology and his kindly personality are well remembered. He was a great student and teacher and it has seemed to those who were more intimately connected with him, that his memory would be best perpetuated by the endowment of a special library on Obstetrics and Gynecology in the Lane Library which was founded by his intimate friend and life-long collaborator Dr. Levi Cooper Lane, the founder of Cooper Medical College.

A special library on Ophthalmology and Otology in the Lane Library, similar to the one which is now proposed for Dr. Gibbons, has already been endowed by Dr. Adolph Barkan.

A fund of over $1,000 has been collected for the Gibbons Memorial and it is hoped that his many friends and former patients will take advantage of this opportunity of bearing testimony to the high regard in which they hold his memory and will make substantial addition to this memorial to the most unselfish of men.

It is proposed to raise $10,000.

Please send all remittances to Dr. Geo. B. Somers, Treasurer, Lane Hospital, Clay and Webster Sts., San Francisco.

For the Faculty of Cooper Medical College.

W. OPHULS, Vice-President.

GEO. B. SOMERS, Dean.

SOCIETY REPORTS

SAN FRANCISCO POLYCLINIC SOCIETY, FEB. 7, 1912.

Dr. Vard H. Hulen described the technic and demonstrated the apparatus for doing his operation for extracting a cataract in its capsule, this method having appeared in the July 15, 1911, issue of the Journal of the American Medical Association.

Dr. Hulen does not at present select his operation for private patients owing to the novelty of the principle of using vacuum fixation of the lens, etc., and the as yet unsettled position of the method in ophthalmic surgery. It is hoped that further experience will prove this method suitable for all senile cataracts of any degree of maturity, and superior to any intracapsular operation yet advanced.

It cannot be hoped that the Smith method will be generally adopted in this country or Europe when Maj. Smith himself says that to do his operation properly the surgeon must first have been trained under his (Smith's) personal direction through hundreds of extractions, and also that an experienced assistant therein is almost as necessary as a carefully trained operator.

It is generally conceded, I believe, that none of the men of this country who have been with Maj. Smith succeed in doing the Smith operation at home with the same percentage of good results as they obtained in India, this also applies to Maj. Smith's experience in this country and elsewhere outside his own hospital in Jullundur. This is probably due to the absence of his wonderfully experienced native assistant and also to the possible differences between the American and European patient and the Indian cataract subject.

Replying to the discussions I would not say that further experience with my method may not bring unexpected objections into view but the volume of the vacuum cup will not be one. The section for any intracapsular extraction must include, one-half the circumference of the cornea. My instrument does not require such a section for the vacuum pressure brings the cataract into the cup and in extracting through the section only the paper thickness of the cup counts; its size in the interior chamber before the vacuum is connected is of no importance. However my extractor with the dangling tube attached is quite an awkward instrument to handle as compared with those heretofore employed in the ordinary extraction.

Dr. M. W. Frederick: I think no operation is easier than the cataract. All were shaken up by the Indian method but no one in this town has ever attempted to do it. Major Smith stated that it required a great deal of practice on cheap material. Dr. Green, of Dayton, Ohio, did this operation on a local physician and the outcome in that case makes us desirous of performing the operation of extraction in the capsule if we knew how. The only approach to that operation that I have seen is the method proposed by Dr. Powers. The objection to this method of Dr. Hulen is the relatively large size of the instrument that has to be introduced.

Dr. Vard H. Hulen: The records of Major Smith do not amount to much; we know nothing about the acuteness of vision subsequently. When one of these patients leaves the hospital he is asked if he sees well and if he answers in the affirmative it is put in the record as a good result. If he answers that he does not see well it is put down as a poor result, and if the eye is lost it is put down as a failure.

2. Some Cases in Dermatology. Dr. Martin Regensburger.

Case No. 1—This is an interesting case of psoriasis. The patient is a machinist of 36 years. For three months he has had this eruption over the body. It comes back each year and appears on different parts of the body; there is no itching. Thirteen years ago he was tattooed and five years ago the eruption first appeared. The eruption is now not as bad as it was before we commenced treatment. It is claimed by some authors that tattooing will cause psotiasis, but whether or not this was the cause in this case we do not know. It generally appears in robust people. Three weeks ago he came to the clinic and under treatment the eruption is disappearing very rapidly. There is no family history; generally there is a family history and as a rule it skips from one generation to another.

Case No. 2—This is a case of mucous patches of the tongue. The patient is 60 years of age; at 40 years of age he had a chancre. There is a very deep sore on the left side of the tongue. He has been given iodide and has improved considerably. The mucous patches of the mouth are most difficult to get rid of; even with Salvarsan there is not much help. You will see that the whole tongue is involved.

Case No. 3—This patient had a chancre three years ago. He came to us with a macular eruption all over the body. He was put under mercurial treatment and the rash disappeared but he insisted upon having Salvarsan and so last Saturday we gave it to him. As you all know I am not in favor of the use of Salvarsan, for the more I read about it the less I want to give it, as there have been so many accidents connected with it. In my practice I have had such good results with the mercury and iodide of potash that I favor it, as when we use that we know where we stand, but with Salvarsan we do not know how we stand. I am afraid to use it and do not want to get into trouble with my patients. After taking the Salvarsan this patient had no symptoms. The eruption has now almost disappeared. In this case we were rather timid about administering the Salvarsan because the patient had a ctaract of the left eye, but Dr. Hulen examined him and recommended that it could be given without any danger.

Dr. E. D. Chipman: Referring to the first case presented by Dr. Regensburger I will say that there is no problem in dermatology more interesting than psoriasis; it belongs to that class of cases the causes of which we do not know. Two years ago at the American Dermatological Association I was surprised to gather that the majority of men seemed to favor the view of parasitism in the etiology of psoriasis. I cannot subscribe to that at all, because of its tendency to recur, the special seats of predilection, its appearance at all times and under all conditions which would not favor the growth of micro-organisms. I had a case in which the hands were very much like the hands in this patient and he would do well for a while and clear up under treatment, and when that treatment would be used at a later period it would be found that it had lost its effect. Under the X-ray lesions fade away as if by magic but they occur again and it takes longer exposure to effect the cure. Concerning Dr. Regensburger's remarks with reference to Salvarsan, I understand his point of view as I have worked with him and he seems to have a knack of getting more out of mercury and iodide than most of us. His treatment of syphilis with pills does give better results than we see in most places. I have given intramuscular injections of Salvarsan carefully and yet although the lesions disappeared there has not been a reduction in the Wassermann that one would hope for.

Dr. E. A. Victors: In regard to the Wassermann and Salvarsan, because of several injections of Salvarsan it does not necessarily mean that a negative Wassermann reaction be immediately pro-

duced. It is the result of immune bodies rather than an activity. Often after a few weeks the Wassermann is almost as positive as before the Salvarsan injection. Then comes secondary chance and in about 7 days the reaction becomes negative. The earlier serological test should not be considered in any sense as an index of the effect of Salvarsan.

3—Report of a Case of Cesarean Section under Local Anesthesia; patient suffering from exophthalmic goitre. Dr. A. J. Lartigau.

This case is interesting because the life of the patient was saved by the performance of this operation. The patient was referred to me by Dr. Terry in May, 1911. She was 29 years of age and there was nothing of importance in the family history. As a matter of fact, this patient had been, although delicate throughout life, perfectly well until three years ago, when she developed symptoms of classical exophthalmic goitre. For this she consulted Dr. Terry, who advised operation for removal of the thyroid gland. The patient's general condition was generally very poor; in addition to the marked exophthalmic symptoms there was albumin in the urine and large numbers of hyaline and granular casts. The condition was so critical that Dr. Terry felt he was not warranted to do the operation at a single step, so he proposed the operation of ligation of the thyroid artery. At all events the greater portion of the thyroid gland was removed. The patient gradually recovered and was quite well until about one year ago; the condition of the kidney so improved that the albumin disappeared. She then married one year prior to the time that she came under my observation. She became pregnant and at her fourth month of pregnancy she was referred to me, as I said before, by Dr. Terry. At that time she was especially pale, poorly nourished and there was marked cyanosis of the nose, tips of the fingers and wrists. There was edema of both lower extremities, well marked exophthalmos; the right lobe of the thyroid could not be made out while the left was the size of a walnut; the veins of the neck were distended, pulse 160, and the heart action was extremely irregular. The physical examination of the lungs was negative with the exception of pronounced dyspnea when I saw her, and moist rales of both bases; otherwise the examination was really negative. The pelvic measurements were quite normal. The urine which was submitted contained a large amount of albumin and large numbers of casts, both hyaline and granular. After consulting with Dr. Terry we decided to explain to the patient and her family that she was in a very grave condition and that the outlook for the patient was very poor as she had five months to go. However, she decided to have nothing done, so returned to her home in Burlingame. I insisted that she should go to bed, be put on a milk diet and the urine be measured every 24 hours. Notwithstanding this treatment the general symptoms of the patient became gradually worse, the edema of the legs increased, the amount of albumin likewise increased in the urine and the urine dropped in the next 6 weeks to between 14 and 15 ounces in 24 hours. In the meantime I saw her several times; the dyspnea had increased remarkably, the cyanosis also was accentuated and the pulse rate had increased. On Oct. 24th the patient was brought from Burlingame and taken to the St. Francis Hospital. I saw her in bed about 4 o'clock in the afternoon and there was pronounced cyanosis of the lips and the heart action could not be counted. I had Dr. Terry count it and he tried to, but could not arrive at any very accurate conclusion in that respect. The patient was then almost in the sixth month. We explained the situation to the family and proposed Cesarean section. We concluded that if we induced labor the effort of labor would prove too much. At 10 o'clock that night Ceserean section was done under local anesthesia, with the assistance of Dr. Reginald Knight Smith. It was done under novocaine ½% in which a few drops of adrenalin was added. The operation was completed in 26 minutes, the child living from 10 to 11 hours. The patient had a very stormy convalescence. After 4 or 5 days the general condition improved and at the end of 3 weeks a good many of the general exophthalmic symptoms gradually subsided although the pulse rate was 110 at the end of 3 weeks. I have since seen this patient several times and while her action still remains between 100 and 120, she is strong and able to get around more or less; the albumin has almost entirely disappeared from the urine, there still are a few casts and the edema of the lower extremities has almost disappeared. This case emphasizes the value of Ceserean section under conditions such as presented themselves on this occasion. It seems to me that if Cesercan section were more frequently employed where the issue is doubtful that we would have much more favorable results. In the last year I have used Ceserean section in three cases of placenta previa with excellent results in all three cases. I also used it in a case of transverse position, and in this it was successful.

Dr. F. B. Carpenter: There is no question that Casarean section holds a valuable place in abdominal surgery, but there is no doubt but that the pendulum is going to swing too far, and the procedure be employed where it is unnecessary. It occurred to me as the Doctor has been talking that in this particular case that possibly instead of operating on the woman's abdomen had more of the thyroid been removed the pregnancy might have been gone through with and the patient might have recovered in better condition than the Cesarean section left her. It is a familiar fact that thyroid tissues regenerate even after operation and it is quite within reason that had such a thing been done that section might have been avoided and possibly the woman would have had much less trouble.

Dr. G. Barrett: I would like to ask as to the advisability of section of the tube in cases of such marked exophthalmos and the probable recurrence of symptoms of the same kind.

Dr. A. J. Lartigau: I stated that this case was extremely interesting from the clinical standpoint on account of the recurrence of exophthalmic goitre after operation under pregnancy. In a general way pregnancy influences exophthalmic goitre badly although there have been instances where the goitre has benefited by pregnancy but the general impression among those having experience in this line is that pregnancy aggravates the condition. This patient had been operated upon by a man of experience, she had recovered almost entirely from her symptoms of exophthalmic goitre and had been free from symptoms for at least one year. Then under the influence of pregnancy the remaining parts of one lobe gradually became larger and larger and with the increase in size of the remaining thyroid tissues the exophthalmic symptoms returned and became more pronounced. Regarding the comment of Dr. Carpenter on the performance of a second thyroid operation I do not think that would have been of influence on the condition at the time she presented herself to me. She was then not only seriously ill from exophthalmic symptoms but also from the kidney standpoint, the urine contained large amounts of albumin and hyaline and granular casts and leukocytes; the urinary condition became gradually worse as well as the exophthalmic symptoms. With reference to Dr. Barrett's question. This subject of course was thoroughly discussed with the patient, her husband and her relatives but there were strong religious grounds why this

should not be done; she would not under any circumstances consent, nor would her husband or the remainder of her family. She proposes to wait and improve and possibly in several years she will go through the same experience again in an attempt to have a child.

4. Report of a Case of Fracture of the Frontal Bone and Meningitis. Dr. W. F. Beerman.

The case I wish to report was seen with Dr. Berndt on Oct. 19th, 1911. Patient is an electrician, age 31; was thrown from an automobile striking on his head; he was rendered unconscious and remained so for six days. Then for two or three days he got about and did a little work around his home, following which patient showed signs of dementia. He was likewise forgetful, dirty in his habits and had to be watched in order that he did not injure himself or others. He was brought to San Francisco and placed in a hospital, where he was observed by a physician for a week; the hospital authorities caused his dismissal saying they did not care for insane patients. He was taken to another hospital and dismissed from that institution for the same reason. When I saw the patient it was six weeks after the accident; examination revealed a partial bitemporal hemianopsia and total bilateral anosmia. The reflexes, sensations, muscle sense, optic discs and every other function of the nervous system were normal. Palpation of the skull was everywhere painful, particularly over both frontal bones. Neck was tender and rigid. Kernig sign was well marked; no Babinski. Lumbar puncture was performed and the spinal fluid was under extremely high pressure. Examination of spinal fluid; marked positive Noguchi, also Nonne. The cell count was extraordinary in that there were from two to three hundred or more small and large lymphocytes to the field. White blood count 7000. He was running a temperature, and as we know fever is not in favor of a luetic process. Nonne states in his newest edition on Syphilis of the Nervous System that fever is very uncommon. Oppenheim states that the presence of high fever speaks for a complicating process. Strassman has lately reported 2 cases of cerebrospinal syphilis where the temperature ran to 101, 102 and 103 F. With the knowledge of the existence of a fracture of the skull the question as to the nature of the meningitis arose; whether it was serous or whether it was a form of secondary meningitis following fracture, or whether of tuberculous or syphilitic origin. The Wassermann was negative in both blood and spinal fluid. The cell count in the spinal fluid demanded the use of anti-luetic drugs, so the patient was placed on large doses of K. I. and mercury and within a week his condition began to improve. The improvement was so rapid that within two weeks after the treatment had been instituted the patient was discharged entirely free from all subjective symptoms and has returned to his work. Sooner or later, however, an operation may be demanded for the relief of the depressed fracture of the right frontal bone. An interesting feature of this case is that 10 days after treatment was begun the patient's friends noticed that when patient was standing up fluid ran from his nose. I noted at an examination I had made, that if the patient stood erect, a clear fluid ran in a steady stream from the left nostril. The fluid showed the same characteristics as the fluid obtained by lumbar-puncture. In the stained slide the lymphocytes averaged one to two hundred per field. I believe that the characteristic cell count of the spinal fluid, together with the rapidity with which anti-luetic remedies brought about a condition of cure, justifies the diagnosis of a basal syphilitic process, following trauma of the skull.

Dr. Barrett: I would like to enquire of Dr. Beerman what size doses of K. I. he used, and whether or not X-Ray was taken that showed the fracture.

Dr. W. F. Beerman: The dose used was 60 gr. three times a day and worked up to 200. X-Ray was taken and showed fracture of the inner table of the frontal bone.

5. Interscapular thoracic amputation. Dr. H. A. L. Ryfkogel.

Dr. F. B. Carpenter: I have not had any experience with this operation. From the general direction of the lymphatic stream from the arm through the axilla and through the subclavian vein makes it look as if it were a very rational procedure and a thing that should be considered in any case involving metastatic subsequent growth.

Dr. A. J. Lartigau: While I have had no experience with this class of cases I have seen in my former training a number of cases of this sort operated upon and I wish to emphasize as Dr. Ryfkogel has done, the importance of radical operations in these cases. In the Roosevelt Hospital, New York, I saw a number of cases operated upon of carcinoma, and more especially sarcomas of the hand, where if the incomplete operation was done it was followed by recurrence higher up in a short time. I remember the case of a young man who shortly after marriage developed on the ring finger, at the point where the finger was in contact with the ring, a melanotic sarcoma. He consulted a Chicago surgeon who did the conservative operation and eventually he had to lose the finger as well as part of the hand. The diagnosis was not made clinically but microscopically. Finally the patient had recurrence which necessitated amputation of the arm by the late Dr. Bull. A short time afterwards there was involvement of the axillary glands notwithstanding the fact that this was sarcoma. A third operation was done but it was of no avail for already the pleura was involved. It seems that in these cases radical operation should be done at once especially if the growth is of distinct malignant nature.

Dr. E. D. Chipman: The general character of the papers presented here tonight has interested me greatly and they are so well presented that one would almost be delighted to have a fracture of the skull, a cataract, to say nothing of a Cesarean section.

Dr. H. A. L. Ryfkogel: I would like to suggest something which I forgot in the original talk and that is that this operation could be used not infrequently in certain ordinarily inoperable cancers of the breast, not with the idea of curing the patient but with the intention of getting rid of the mass filling the axilla. This is quite feasible as shown by the second case which I reported. This patient showed a condition we see frequently in inoperable breast cancers.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of March, 1912, the following meetings were held:

Section on Medicine, March 5th, 1912.

This meeting was held at the University of California Hospital, Dr. H. C. Moffitt demonstrating practically all the interesting medical cases in the wards of the hospital. In spite of the inclemency of the weather and the long ride entailed quite a number of the members attended, all of whom felt amply repaid by the excellent program.

Regular Meeting, March 12th, 1912.

1. Hookworm among Oriental Immigrants. Dr. W. M. Glover, U. S. P. H. and M. H. S. Discussed by Dr. H. Gunn, Dr. B. Ffoulkes and Dr. M. W. Glover. (To be published in J. A. M. A.)

2. Some Reflections after Twenty-five Years of

Private Practice in Obstetrics. Dr. Henry J. Kreutzmann. Discussed by Dr. G. Adams, Dr. C. K. Herzog and Dr. H. J. Kreutzmann. (To be published in J. A. M. A.)

Section on Surgery, March 19th, 1912.

1. Report of a Case of Left-Sided Hydronephrosis. Dr. M. Krotoszyner.
2. Late Result in a Case of Traumatic Epilepsy. Dr. Alfred Newman. Discussed by Dr. Sol Hyman and Dr. Alfred Newman.
3. Hot Air Treatment in Gynecology with Demonstration of an Apparatus. Dr. W. F. B. Wakefield. Discussed by Dr. A. J. Lartigau, Dr. J. Rosenstirn and Dr. W. F. B. Wakefield.
4. Case Reports. Dr. H. J. Kreutzmann.
5. The Choice of Operation in Hysterectomy. Dr. J. H. Barbat. Discussed by Dr. L. H. Hoffman, Dr. F. B. Carpenter, Dr. J. Rosenstirn, Dr. H. J. Kreutzmann and Dr. J. H. Barbat.

Eye, Ear, Nose and Throat Section, March 26th, 1912.

1. Presentation of a Case of Double Glioma. Dr. C. R. Bricca. Discussed by Dr. C. F. Welty, Dr. W. H. Crothers, Dr. H. B. Graham, Dr. W. F. Blake and Dr. C. R. Bricca.
2. Review of Some Recent German Literature. Dr. H. Horn.
3. The Value of Prisms in Eye Strain. Discussed by Dr. V. H. Hulen, Dr. J. J. Kingwell, Dr. W. F. Blake and Dr. A. S. Green.

ALAMEDA COUNTY.

Report of the meeting of the Alameda County Medical Association for the months of January, February and March, 1912. For the January meeting the program was arranged by Dr. M. L. Emerson.

I. Hemorrhoids .....By Dr. Dukes
II. Varicose Veins.....By Dr. Coleman
III. Surgical Knots.....By Dr. Emerson
IV. Circumcision.....By Dr. Ewer
V. Ingrown Toe Nails.....By Dr. W. A. Clark
VI. Transfusion.....By Dr. Chamberlain
VII. Infected Wounds.....By Dr. Buteau

Dr. Milton reported an interesting case of Arthritis Deformans or Rheumatoid Arthritis.

Dr. Chamberlain in closing his paper said, that though Transfusion is classed as a minor operation it should not be attempted without careful preparation and training on the part of the surgeon and in any event, should be looked upon as an operation of last resort. Transfusion has been tried in a great variety of cases, its greatest, if not only success, however, has been in the secondary anaemias, shock and hemorrhage, and especially to fortify an anaemic patient against the dangers of a major surgical procedure.

Dr. Buteau in his paper suggested that in the operative treatment of fractures cotton gloves might be worn to protect the rubber ones. In the treatment of accidental wounds a warning note is sounded against the use of disinfectants. It is the doctor's practice to cleanse the skin and wounds with a normal saline solution and then drain. Punctured wounds are cut down upon and drained. If the wound be from the street or wadding antitetanic serum is used.

February Meeting.

Dr. Reinle read a paper on the "European Opinion of Salvarsan."

Dr. Emerson on "Gastroenterostomy in Apparent Malignant Cases."

Dr. Powell gave a paper on "Why One Should Go Away from Home."

Dr. Buteau reported an interesting case presenting symptoms of Angina with increased dullness around the heart. A pulsating tumor-like mass was discernable. Aneurism was suggested but no diagnosis made. There was a history of syphilis and on this basis the patient was treated. He improved for two weeks when he died suddenly. The post-mortem showed an aneurism with a blood clot closing the lumen of the aorta and a rupture of the left ventricle.

March Meeting.

The following program was arranged by Dr. L. H. Briggs:

I. Demonstration of Syphilitic Eye Lesions .....Hayward Thomas
II. Three Cases of Cerebral-Spinal Syphilis .....A. A. Alexander
III. Experience with the Wassermann Reaction in Syphilis.....W. S. Kuder
IV. Demonstration of the Phenol-Sulphono-Pthalein Test of Kidney Function... .....L. H. Briggs

These papers brought out an interesting discussion, participated in by the writers, Drs. Emerson, Reinle, T. J. Clark, McVey, Riggin and W. H. Sampson.

PAULINE S. NUSBAUMER,
Secretary.

CALIFORNIA ACADEMY OF MEDICINE.

The California Academy of Medicine held its regular meeting on March 25th, 1912, in the Library of the County Medical Society. The following scientific program was given:

1. Demonstration of an Apparatus for Determining the Pressure of the Cerebro-Spinal Fluid. Dr. E. S. Kilgore. Discussed by Dr. G. E. Ebright, Dr. R. L. Wilbur, Dr. G. Y. Rusk, Dr. E. C. Fleischner and Dr. E. S. Kilgore.

2. The Management of Labor in Moderately Contracted Pelves. Dr. Henry J. Kreutzmann. Discussed by Dr. A. B. Spalding, Dr. A. J. Lartigau and Dr. H. J. Kreutzmann.

Major Donald Currie, U. S. P. H. and M. H. S., and Dr. Jule B. Frankenheimer were elected to membership.

Refreshments were served at the close of the meeting.

COOPER CLINICAL SOCIETY.

The Cooper Clinical Society held a meeting on Monday, April 8th, 1912, at Cooper Medical College, at which the following program was given:

1. Demonstration of Surgical Cases. Dr. W. H. Winterberg.
   (a). Supra Condyloid Fracture of the Humerus.
   (b). Epiphyseal Separation.
   (c). Two Cases of Whitehead Operation.
   (d). Pedunculated Hemorrhoid.
   (e). Stricture, Syphilitic, of the Rectum.

Discussed by Dr. James Eaves, Dr. J. Walsh, Dr. R. W. O'Neal, Dr. W. H. Winterberg.

2. Demonstration of Medical Cases. Dr. P. H. Luttrell.
   (a). Malignancy Originating in Region of Gall Bladder, with Metastases in Liver and Stomach.
   (b). Pseudo Muscular Dystrophy.
   (c). Infiltration of the Liver.
   (d). Bronze Diabetes.
   (e). Lead Palsy.

Discussed by Dr. Mertens, Dr. S. O. Beasley, Dr. H. R. Oliver, Dr. T. Addis, Dr. R. W. O'Neal, Dr. P. H. Luttrell.

At the close of the program refreshments were served.

ORANGE COUNTY.

The annual election of officers was held at the meeting of April 5th, with the following result: President, Ida B. Parker; Vice-President, H. A. Johnston; Secretary, John Wehrly; Treasurer, H.

S. Gordon; Librarian, C. D. Ball. The Society received six new members for the year and lost two by death and one by removal.

JOHN WEHRLY, Secretary.

SAN JOAQUIN VALLEY MEDICAL SOCIETY.

The Thirty-second regular meeting of the San Joaquin Valley Medical Society was held in Fresno, Tuesday, March 12, 1912, at which a large attendance was present.

The following papers were read and discussed quite freely.

1. Indications for and the Technique of the Block Dissection of the Neck in Cancer of the Lip and Tongue,
   H. A. L. Ryfkogel, M. D., San Francisco.
   Discussion by
   T. D. Blodgett, M. D., Tulare.
2. (a) A report of two cases of Sinus-Thrombosis,
   (b) A report of a case of Retro-pharyngeal Abscess,
   D. H. Trowbridge, M. D., Fresno.
3. Report of a case of Sinus Thrombosis,
   F. A. Hamlin, M. D., Bakersfield.
   Discussion by
   J. R. Walker, M. D., Fresno.
4. Puerperal Sepsis,
   A. B. Spalding, M. D., San Francisco.
   Discussion by
   W. C. Chilson, M. D., Tulare.
5. Calculi in Kidney, Ureter and Bladder with X-Ray Plates,
   R. J. Rigdon, M. D., San Francisco.
   Discussion by
   C. P. H. Kjearbye, M. D., Fresno.
6. Removal of Ureteral Stones Through Cystoscope,
   Alfred B. Grosse, M. D., San Francisco.
   Discussion by
   W. W. Cross, M. D., Fresno.
7. Review of Six Cases of Gall Stone Surgery.
   C. T. Rosson, M. D., Hanford.
   Discussion by
   J. L. Maupin, M. D., Fresno.
8. Tuberculosis from a General Practitioner's Standpoint,
   Fred H. Williams, M. D., Selma.
   Discussion by
   R. W. Musgrave, M. D., Hanford.

Resolutions of respect on the death of Dr. W. T. Maupin were introduced, as follows:

To the Officers and Members of the San Joaquin Valley Medical Society:

Your committee desires to offer the following resolutions of respect:

Whereas, Dr. W. T. Maupin, one of the charter members of this Society, has passed to the great beyond; be it

Resolved, That as one of the oldest practitioners among us he always stood for the best upholding of the profession in every respect, his life, professional and social, being an exponent of this;

That he was always public spirited and ever ready to sacrifice time and effort in public weal. Instance—when Health Officer he was directly instrumental at the expense of time and labor in having the old mill ditch on Fresno street abandoned and filled up;

That he was ever faithful in attending the meetings of the Medical Society, contributing of his ability to its upbuilding and progress. For instance, while feeble from illness, at great effort he attended the last session of this Society;

That he ever held out a helping hand to his brother practitioner, and that in his removal this Society and the profession has sustained the loss of a valuable member and faithful friend; therefore, be it

Resolved, That our sympathy is extended to the family, and a copy of these resolutions be spread on the minutes of the Society.

D. H. TROWBRIDGE,
E. C. DUNN,
O. W. STEINWAND,
Committee.

Owing to the large amount of detail work of the Secretary, it was found necessary to appoint a Committee on Scientific Program, which was composed of Dr. Geo. H. Aiken and T. M. Hayden.

The following officers were elected for the ensuing term: Dr. H. Hildreth, Delano, President; Dr. O. W. Steinwand, Selma, First Vice-President; Dr. A. R. Nicholson, Oleander, Second Vice-President; Dr. R. O. Ross, Fresno, Secretary; Dr. D. H. Trowbridge, Fresno, Assistant Secretary, and Dr. T. M. Hayden, Fresno, Treasurer.

Drs. R. L. Rigdon, H. A. L. Ryfkogel and A. B. Grosse, all of San Francisco, added much interest to their papers by giving illustrative slides on their various subjects discussed, which were greatly enjoyed by the members present.

Dr. A. B. Spalding's paper was read at the banquet.

The evening was delightfully spent at the banquet held at the Rathskeller of the Sequoia Hotel, where pleasant wit, humor and good fellowship prevailed.

The next meeting will be held at Merced in October, 1912.

SONOMA COUNTY.

The meeting of the Sonoma County Medical Society for March was well attended and the doctors spent a pleasant and profitable evening. Dr. T. W. Huntington, professor of surgery in the University of California, and president of the California Medical Society, was the guest of honor at the meeting. He delivered an address on "Some Problems of Medical Education." The address was listened to with rapt attention on the part of the Sonoma county physicians. Those present at the meeting were: Healdsburg—Dr. I. A. Wheeler and Dr. J. W. Seawell. Sebastopol—Dr. J. W. Kerr, Dr. F. N. Folsom and Dr. J. J. Keating. Occidental—Dr. R. A. Forrest. Santa Rosa—Dr. E. M. Yates, Dr. R. M. Bonar, Dr. J. W. Cline, Dr. F. O. Pryor, Dr. J. W. Scamell, Dr. J. H. McLeod, Dr. R. A. Howard, Dr. J. W. Clark and Dr. Jackson Temple.

GOOD CIRCULAR LETTER.

To the Physicians of Alameda County:

Dear Doctor:—In an effort to acquaint you more fully with certain provisions of Section 8 of the California Poison Law, the Alameda County Pharmaceutical Society is submitting to you this letter and asks that you kindly give it your serious consideration.

This letter has been previously submitted to the Alameda County Medical Society, which Society is giving our efforts their unqualified endorsement and support.

Certain portions of Section 8 of the California Poison Law, which are of particular interest to the physicians of this State, are as follows:

Sec. 8. It shall be unlawful for any person, firm or corporation to sell, furnish or give away or to have in their or his possession any cocaine, opium, morphine, codeine, heroin, alpha eucaine, beta eucaine, nova caine or chloral hydrate or any of the salts, derivatives or compounds of the foregoing substances or any preparation or compound containing any of the foregoing substances or their salts, derivatives or compounds, excepting upon the written order or prescription of a physician, dentist or veterinary surgeon, licensed to practice in this State, which order or prescription shall be dated, and the name of the person for

whom prescribed, written in by the person writing said prescription, and it shall not be again compounded or dispensed if each fluid ounce or avoirdupois ounce contains more than 8 grains of opium, 1 grain of morphine or 2 grains of codeine or ½ grain of heroin or 1 grain of cocain or 1 grain of alpha eucaine or 1 grain of beta eucaine or 1 grain of nova caine or 60 grains of chloral hydrate, excepting upon the written order of the prescriber for each and every subsequent compounding or dispensing. It shall be unlawful for any practitioner of medicine, dentistry or veterinary medicine to furnish or to prescribe for the use of any habitual user of same, any cocaine, opium, morphine, codeine, heroin or chloral hydrate or any salt, derivative or compound of the foregoing substances or their salts, derivatives or compounds; provided, however, that the provisions of this section shall not be construed to prevent any duly licensed physician from furnishing or prescribing in good faith for the habitual user of any narcotic drugs, who is under his professional care, such substances as he may deem necessary for their treatment, when such prescriptions are not given or substances furnished for the purpose of evading the purposes of this act.

You will observe from the above that it is unlawful for a druggist to sell a nurse any of the prohibited drugs without a physician's prescription.

To fill a narcotic prescription unless the name of the patient and the date are written thereon by the physician, and signed by him.

To fill a narcotic prescription received by telephone unless the physician sends or gives a written prescription later therefor.

To refill a narcotic prescription without the written order of the physician, if same contains more than the amounts of the prohibited drugs provided for in this law.

We trust you may see fit to give this matter your earnest support. Our object in seeking your co-operation is to assist the druggists in maintaining this most excellent law with as little inconvenience as possible to yourself, your patient and the druggist. Yours very sincerely,

THE ALAMEDA COUNTY PHARMACEUTICAL SOCIETY,
W. BRUCE PHILIP, President.
F. S. KLINKNER, Secretary.

GOOD SUGGESTIONS FOR COUNTY MEDICAL SOCIETIES.—ISSUED BY THE NEW YORK STATE SOCIETY.

1st. Improved programs. Interest in the meeting depends largely on the attractiveness of the program.

2d. Take up post-graduate course as recommended by American Medical Association. This systematizes the programs.

3d. Confer with State Board of Health for at least one meeting a year on public health matters. Co-operation with the Health Department is essential to the welfare of the community.

4th. Have at least one reader a year from a distance. Confer with Committee on Scientific Work of State Society if necessary. It will be glad to suggest names of those willing to render such service.

5th. Arrange for one or more clinical meetings a year. Select subject and request all who have proper cases to bring them before the Society; then have a discussion on the same, always with the understanding that discussion of the case shall not be held in the presence of the patient; otherwise, frequently patients cannot be shown for obvious reasons.

6th. Arrange for demonstrations by bacteriologists and pathologists with specimens, lantern slides, etc.

7th. Arrange for social part of meeting. Some light refreshments at the close of the meeting are an adjunct to fraternal intercourse.

8th. See that meetings are held often enough to keep up interest. Once or twice a year is not enough. Invite every member of the profession in the county to at least one meeting a year, not necessarily inviting them all to the same meeting. In counties where men do not show a willingness to write papers either designate writers for different meetings or see that outsiders are invited—in other words, see that the meetings are made interesting. It should be the aim of every County Society to secure a permanent home; a small library, with a supply of current journals, and the use of the larger libraries for reference books will greatly increase interest in the county organizations.

9th. Arrange the time of meeting to accommodate the largest number of members. Where men come from long distances, an evening session is obviously the most inconvenient. An afternoon session will often appeal to a larger number of men when it permits them to reach their homes at a seasonable hour.

10th. Select as officers men who are willing to work. Keep good men in office. Do not promote those who have shown they will not attend to the duties assigned them. Efficiency is the only criterion of leadership. "No physician should accept office unless he is prepared to give the position the attention that it deserves and unless he is interested in the work."

11th. In small societies do not unduly multiply offices—the Secretary's and Treasurer's duties can be best done by one man. Always supply officers with clerical help if work is onerous. Detailed drudgery work should not be asked of men serving for others without compensation.

12th. Make the dues large enough to warrant conducting the Society work in a proper manner. Those who object to the amount of their dues usually do so because they are not receiving full value for them. Give back a dollar in value for every dollar paid in and complaints will be few.

13th. Provide a Committee on Entertainment who shall welcome new or prospective members or guests at meetings. The officers of the Society may be active or ex officio members of such committee. Newly registered physicians should be visited by such committee or written to and asked to join the County Society.

14th. See that the meetings, programs and proceedings are published regularly and promptly in the State Journal.

15th. Have high ideals. Be liberal yet firm in maintenance of a high ethical standard. Educate the public. Be a power for good in the community. Do not be ashamed of the County Society or apologize for it; make it better. Attend all meetings and see that others do the same. "The County Society is a conservator of patriotism and worthy citizenship."

BOOK REVIEWS

One Hundred Surgical Problems. James G. Mumford, M. D. Published by W. M. Leonard, Boston, 1911.

Written in most captivating style and put in the form of narrative more engaging than the usual case histories, this volume offers to all medical men, not only to surgeons, a most attractive recital of some of the author's ripe experience. It will not stand as a keen surgical discourse but criticism on that score would be eminently unfair as it is plain enough that it was not written with such a purpose.

When tired of poring over technical studies and

protocols of research we can imagine no more delightful or refreshing mental food than recourse to the pages of this volume. It is the sort of a work that would well adorn the tired man's bedroom table and not only enlighten him but decidedly entertain him. On the other hand it must not be thought that we are trying to judge the work cavalierly, for the pages are redolent with cases in which the author betrays a judgment born of a mind thoroughly and soundly surgical, and he is to be thanked for giving to the profession a book which most satisfactorily fills its own peculiar niche.

The Bacillus of Long Life. By Lorendon M. Douglass, F. R. S. E. Publisher, S. P. Putnam, London, New York.

We have here a book that is very much better than its title. First it concerns not a bacillus but most of the bacilli of milk. Secondly, it deals but in a passing way with longevity; thereby it is not a fanciful literary production, as its name might suggest, but a very thorough, practical, and scientific treatise on all the phases of the subject of lactic acid formation in milk. From the first chapter on, the history of soured milk as aliment, through the subsequent ones on the chemistry of milk, the handling of milk, the bacteriology of milk, the preparation of soured milks in private families, and for commercial distribution, we have a book giving concise facts, scientific experiment and lucid instruction. It is a book without padding, and yet it is a most readable book. The work is particularly valuable to the medical reader, in that it provides a corrective to many of the wild statements concerning the modes of using acid forming bacilli and offers useful suggestions. Thus we learn that with some forms of defective digestion, skimmed milk, whey or even extract of malt, may form the culture medium and vehicle of administration. A large assortment of microphotographs, and cuts amply illustrate the text. H. D'A. P.

Diseases of Nose and Throat. By St. Clair Thomson, M. D., F. R. C. P., F. R. C. S. Published by Appleton & Co., 1912.

In Diseases of the Nose and Throat by St. Clair Thomson, we have the best book on this subject for students and practitioners that has yet appeared in the English language. It is what it purports to be, a ready reference, arranged so as to be easily comprehended. The author has happily omitted a large mass of material that so often unnecessarily burdens works of this character. The anatomy and physiology for instance, have been given scant space, as have the subjects of malformations and plastic operations, whereas adenoids, accessory sinus inflammations and larynx affections have been treated with a modern grasp of the subject that is seldom shown by our modern book compilers. The chapter on adenoids alone is a masterpiece and well worth having in one's library. The book is not overloaded with an extensive bibliography; at the same time enough is given to afford a good working basis for one doing research work. H. B. G.

Manual of Diseases of the Ear, Nose and Throat. By John J. Kyle, B. S., M. D. 3rd edition. Published by P. Blackston's Sons & Co., Philadelphia, 1911. Price, $3.00; flexible leather.

In the third edition of the Diseases of the Ear, Nose and Throat by Dr. J. J. Kyle, we have a valuable addition to our rapidly growing literature on the specialty covered. The chapters on Embryology, Anatomy, Methods of Examination and Diseases of the Nose, Throat and Accessory Sinuses are especially notworthy, containing the subjects in particularly complete form. There are some portions of the book, however, which, in the opinion of the reviewer, could well be revised. In a manual on any specialty one would hardly look for a general dissertation on bacteriology, pathology and immunity such as appears here. This could easily give way to a better adaptation of these subjects to the specialties in hand, under the assumption that the student was already acquainted with their general principles. The field is most interesting and important as taken up by Körner and Neumann.

The paragraphs on Paraffin Prothesis should either be left out or made more extensive as there is hardly enough warning given to the student of its extreme danger. Paraffin, either hard, soft or in mixtures, in the hands of those who are unacquainted with its uses and accidents, is a very dangerous element and yet can be made a valuable adjunct to surgery in proper hands. No warning is given save that of Ecxstein and that one is incorrect as proven by Gersuny.

The chapter on Labyrinth Suppuration follows those of other books in English on the same subject; it is exceedingly incomplete and inaccurate. All writers of books on this subject would do well to peruse carefully the monographs of Dr. G. W. Mackenzie. H. B. G.

—A Manual of Materia Medica. By E. Quin Thornton. Published by Lea & Febiger, Philadelphia and New York. 1911.

This manual by Thornton has been written according to views formed by the author after a number of years of teaching, and embodies such facts about drugs as he considers essential for a student entering upon a thorough course in therapeutics. He has aimed to present all the essential and useful data about the official drugs and chemicals, purposely avoiding discussions of physiological actions and medicinal uses, both subjects which he considers belong to the domain of therapeutics.

Part I takes up dosage, methods of administration of drugs, prescription writing with all the Latin essentials, incompatibility, and weights and measures. The different subjects are not discussed extensively, but no fault can be found with their presentation.

Part II takes up alphabetically all drugs, chemicals and preparations official in the United States Pharmacopoeia. Latin and English names are given, also synonyms and the sources, ordinary physical properties, important constituents, doses, etc. The subject-matter, while brief, is yet well presented and covers the essential of the subject as outlined by the author in his preface.

Part III presents alphabetically a complete list of the United States Pharmacopoeial preparations arranged according to pharmaceutical classes. The methods of preparation are stated. The section is intended for those working in the laboratory or pharmacy.

The manual can be safely recommended as a safe and satisfactory book on the subject of materia medica, pure and simple.

H. W. ALLEN.

Practical Electro-Therapeutics and X-Ray Therapy. By J. M. Martin, M. D. Published by C. V. Mosby Co., St. Louis, 1912. Price, $4.00.

In this volume Dr. Martin has succeeded in condensing the vast field of his subject to a clear, concise and yet adequate minimum of the essentials. It is apparent that each division of this book has been written in the light of the author's personal experience; therefore, there is a pleasant sense of intimacy and authority conveyed by his book that is refreshing when contrasted with the rather indefinite conclusions one so often encounters in books on electro-therapy.

The first 100 pages contains a really entertaining and simple exposition of the physics of electricity

and an easily understood description of the modern equipment for the use of electricity in medicine. Following this is a good epitome of the physiology of electricity in its application to the human body.

The chapter on diseases of the nervous system, while closely following Tousey, is fairly complete and very conservative and certainly does not advocate electricity as a cure-all for every sort of nervous disease. A short and instructive chapter on high-frequency and one on photo-therapy follow. The rest of the book, about one-half, is devoted to X-ray therapy, the X-ray in fractures, dislocations, foreign bodies, calculi, dentistry and the medico-legal aspect of the X-ray.

The impression given by the whole book is one of an excellent manual of electrical procedures in medicine and should be especially useful to either a beginner in the field of electro-therapeutics or to any one wishing a good, clear, working knowledge of the science. Much of the satisfaction derived from reading this work is due to the fact that it seems to be the record of the personal experience of the author modifying and organizing and making practical the elaborate and complicated systems of electro-therapy that have hitherto been in vogue. G. H. T.

Obstetrics. Edited by Jos. B. De Lee, M. D. The Practical Medicine Series, Vol. V, 1911. Published by The Year Book Publishing Co., Chicago, 1911. Price, $1.50.

The author has given us a compact volume of 233 pages, full of up-to-date obstetrical literature. The subject-matter is laid out systematically, and the different papers, for the most part published in foreign journals, are arranged under their respective heads of Pregnancy, Labor, Puerperium, or the New-born.

In Part I you will find the question of toxemia of pregnancy fully discussed as to etiology, pathology, diagnosis, prognosis and treatment, bringing this topic right up to date. Also the treatment of placenta previa, as advocated by the modern European authorities, is concisely and explicitly written in twelve short pages.

Part II deals mostly with operative obstetrics, pelvic contractions and postpartum hemorrhage. The operations of vaginal and abdominal Cesarean section and the newer operations as extraperitoneal Cesarean and hebostrotomy are fully discussed and results of the different advocates are given. Four plates show the different steps in Doderlein operation of "Lateral Extraperitoneal Cesarean Section." Momburg's treatment of postpartum hemorrhage is fully described and criticized.

Part III deals with the modern literature on the management of the puerperium. The major portion is taken up by the chapter on puerperal sepsis.

Part IV on the new-born describes the subject "Fractures and Depressions of the Cranium and its Treatment," also the topic of hemophilia neonatorum and its treatment by use of normal blood serum.

The book treats of the practical experience of the obstetrical authorities, especially those connected with large obstetrical clinics of Europe. The editor's comments throughout the book are valuable additions and give one the American point of view.

The reviewer recommends the book to the general practitioner who is doing obstetrics, for it gives him an opportunity to read all the modern obstetrical procedures which he cannot obtain by consulting the ordinary textbooks.

L. I. BREITSTEIN.

The Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Published by W. B. Saunders Co., Philadelphia. Part I, issued February 1st, 1912. Subscriptions by the year only; four parts per year. Price, paper bound, $8.00; cloth bound, $12.00.

When it was announced that the Clinics of Dr. John B. Murphy were to be offered in book form, the publishers stated that the profession was to be congratulated on the fact that Dr. Murphy had consented to allow the report of his clinics to be presented to the profession. This was not an extravagant statement, for it is generally conceded that the surgical clinic of Dr. Murphy is as interesting and as instructive as it is possible for a clinic to be. Dr. Murphy's method of teaching is almost unique and the fact that his method is appreciated is best seen by the very large attendanee at the Mercy Hospital each Wednesday and Saturday, not to mention other times. His teachings are of such interest because all of his reasonings are based upon the pathologieal eonception of disease: this is emphasized in every possible manner.

The Surgical Clinics discuss a variety of eonditions, some of which are of the greatest importance, and many of the points that are presented can not be found in literature and are largely the products of the fertile brain of the author.

The first case reported concerns carcinoma of the breast; in this article, which occupies 12 pages, the entire subject of cancer is gone over and it gives one more real information than can be found in many works on surgery. He first takes up the subjeet of metastasis, and the reviewer can do no better than to quote the paragraph in this article discussing metastasis to show what an amount of information is presented in a few lines.

"Tumors of the thyroid gland either have a point of eleetion of metastasis or they follow a physiologic selection in their metastasis. There is a definite physiologic relation between the thyroid gland and the long bones, and for that reason metastasis occurring from the thyroid gland takes place in the shafts of the long bones more frequently than in any other position, but not exclusively. I am speaking now of malignant lesions of the thyroid gland. If you have a sarcoma in the thyroid gland, you have a metastatic sarcoma more commonly in the upper end of the tibia and in the upper end of the humerus than anywhere else. Then come the bodies of the vertebrae and, less frequently, the other bones. That does not apply to the innocent or benign tumors of the thyroid gland. In these innocent tumors, known as the metastatic variety, you have from the thyroid gland metastases occurring in tissue whieh is not microscopically differentiated from normal thyroid gland tissuc. These metastases do not occur in the long bones, but in the flat bones, and more particularly in the calvaria—the parietal bones; next in the short bones like the bodies of the vertebrae, and so on. But these are non-malignant metastases of the thyroid gland, so far as we know. When you have tumors of the thyroid gland, they not only metastasize in the bones, but in other structures, and the breast is one of them."

After this the differential diagnosis is taken up and the operation is performed, and during the operation the manner of the extirpation of the growth is discussed; Dr. Murphy does not sever the great pectoral muscle, but splits its fibres, utilizing this muscle later on in the operation for the purpose of filling in the axillary space. He is careful to remove the fascia and glands between this muscle and the small pectoral muscle; he has seen metastasis recur but once in the pectoralis muscle and he does not consider this an important factor in recurrence. Dr. Murphy emphasizes the importance of filling in the axillary space to avoid pressure upon the veins and lymphatics, thereby

preventing the edema of the arm that is so common.

If the axillary veins are torn he maintains that they should always be ligated, never sutured; that there is little danger of hemorrhage on account of negative pressure that exists in the veins. He advocates that the subscapular nerve should not be disturbed, otherwise the woman will not be able to hook her belt from behind; this is a point that is one of the many important points that can be found in this book that are not presented elsewhere.

The final results in carcinoma, he states, have not very materially improved in the last quarter of a century; he maintains that where there is no lymphatic metastasis demonstrable at the time of the operation that the patients remain well exactly as they did in former years, but where metastases are demonstrable the results are as bad as they were in former years.

The subject as presented in this one clinic is so rich in valuable information, however, that it is not possible to give a proper review of the same without analyzing each paragraph.

The next case is a lipoma of the shoulder; here he discusses where the incision should be made, the origin of the tumor and the possibility of recurrence. He states that it is important to remove the basal portion, otherwise the tumor will recur.

In lipoma of the spinal column he emphasizes the fact that the periosteum must be removed, otherwise there will be a recurrence of the growth.

The next case presented is a case of varicocele and the comment upon this condition is very instructive. Murphy attaches considerable importance to the backache that occurs; he also goes into the differential diagnosis of backache at length, enumerating both the positional and traumatic spondylitis peculiar to coal miners and farmers, metastasis, malignant growths, etc.

The next case is one of nerve anastomosis; here the comments are so important and so well brought out that it is hardly possible to give an accurate idea of the valuable information contained in this one article; he takes up the anatomy and physiology of nerves in a very satisfactory manner, and he reports a case of nerve plastic which is well shown by two excellent illustrations.

He takes up the question of the regeneration of nerves and he states that time cuts little figure in the factor of restoration of function; that long intervals may elapse between the time of the division of the nerve and the time of its union if favorable conditions exist for regeneration. During the period that the nerves are out of commission there is an atrophy of the muscle cells, but there is never complete degeneration of the muscle cells beyond the potency of the nerve cells. He believes that the muscle plates diminish greatly in size but as soon as they are spliced again with living nerves they regain their tone and strength.

The reason that there has been such disparity in results in connection with the suture of nerves is that the axonal ends are not properly exposed; if they are properly exposed in all cases success, according to Murphy, would result.

The next case is one for the injection of salvarsan. Murphy's remarks are very striking in connection with the intravenous use of this drug. He states that no surgeon injects anything into a vein without serious consideration; he also remarks that the inside of a vein is a place that the surgeon greatly respects and that the physicians who are not familiar with the surgical art and the pathology of the veins resort to intravenous injection much more readily than does the surgeon.

He also takes up the subject of anaphylaxis with its sequelae of sudden death shortly after the administration of salvarsan or serum. Murphy uses salvarsan intramuscularly but does not use it intravenously.

The next subject is cystadenoma of the breast.

Then there is a case of pelvic tumor presented with illustrations.

On the subject of nerve anastamosis involving the muscular spiral nerve it is extraordinary how much information the author has condensed into this lecture. It appears to the reviewer that there is more information concerning the regeneration of nerves to be found in this article than can be found elsewhere.

There is a case of duodenal ulcer also presented. The pathological side as well as the surgical side of this subject is very well presented.

In conclusion the reviewer believes the book to be a most valuable addition to the literature on surgery. C. G. LEVISON.

ANOTHER LIQUID SULPHUR FAKE.

A report of the analysis of a proprietary nostrum, Sulphume, by the A. M. A. Chemical Laboratory (Jour. A. M. A., Dec. 2, 1911, p. 1853) begins thus: "Many medicinal fakes apparently lead a charmed life. They may be exposed, ridiculed and seemingly annihilated, but in due time they are bound to renew their existence. As a type of such fakes we may take any of the various aliases under which the venerable Vleminckx' solution, after falling into disuse, has been again and again revived and rechristened." Vleminckx' solution which even has forced its way into the pharmacists' formula book, the National Formulary, is made by boiling ordinary sulphur and lime with water and thus obtaining a solution of calcium sulphide. The solution has a rich golden yellow color and a rotten egg odor and because of its odor and of its color appears to appeal to the laity.

Now this preparation with its charmed life has come west and under a new name and by means of new stories is attempting to make a place for itself in the homes of western people. The new name is Sulphurro given to it by its new parents the "C. M. C. Stewart Sulphur Company, Inc., Seattle, Wash.," who recommend its use in rheumatism, asthma, goiter, eczema, dyspepsia and all diseases of the stomach, kidneys, skin and blood and modestly suggest that it may also be used as a rectal enema, a vaginal douche or as an eye wash. According to the advertising matter which is sent out this new, old fake was re-discovered in the Klondike by a miner who in spite of the vast riches which he claimed to have found still thinks of poor suffering humanity and hence is making his discovery available to us. In discussing the liquid sulphur fakes the Journal A. M. A. says: "While we are afraid its disgusting odor will continue to be a strong 'talking point' for the stuff, let us hope that in due course of time the public will learn the fallacy of the old idea that anything that is nasty in taste or odor must be 'powerfully good medicine.'"

NAMES OF MEDICAL PREPARATIONS.

To Manufacturers of and Dealers in Medicinal Products:

Gentlemen:—The Council on Pharmacy and Chemistry of the American Medical Association, since its organization, has been obliged to refuse recognition to a number of otherwise unobjectionable preparations, because their names were considered detrimental to the best interests of the public and the medical profession. In the hope that in the future those who introduce new remedies may see their way clear to adopt names which will not be open to objection, the Council has decided to issue this explanatory statement to the manufacturers of medicinal substances.

The trade names of pharmaceutical preparations or mixtures should be so framed as to indicate the most potent ingredients. An article whose name gives a false impression in regard to its identity

or origin or which is in other ways misleading would not be acceptable for New and Nonofficial Remedies. An article will not be acceptable if its name suggests to the laity the diseases or conditions in which it is said to be indicated.

After December 31, 1912, recognition will be refused also to names so framed as to indicate even to physicians the diseases or conditions for which the article is to be used. The Council will make no objection to articles submitted to it before December 31, 1912, on the ground that the name is suggestive to the physician, provided that the name is already in use at the time of submission and also provided that the name is so framed as not to be liable, in the judgment of the Council, to lead to self-medication on the part of the public.

Medicine, in common with other branches of knowledge, requires that the subjects with which it deals be provided with a rational, descriptive nomenclature. The Council holds it desirable and important not only that the medicaments official in the pharmacopeias should be provided with scientific names, but that those of a proprietary character should also have names which are descriptive of their composition. Further, the Council believes that the interests of both the manufacturer and the consumer, the physician and his patient, can be sufficiently safeguarded if to the descriptive name of an article there be appended a distinctive word, syllable, initial or sign that shall identify its manufacturer. In substantiation of this it may be stated that such designations have permitted manufacturers to build up almost world-wide reputations for their products. Reference need only be made to chloral hydrate, Schering; chloroform, Squibb; phenacetin, Bayer; quinin sulphate, P. W. R.; sodium salicylate, Merck, etc. In view of these considerations, the Council offers its endorsement and co-operation to any effective movement toward the establishment of a rational, and if possible, international system for the naming of medicaments.

However, the Council recognizes that trade conditions make difficult or infeasible, at this time, the adoption of such a rational system of nomenclature. But, on the other hand, experience has shown it possible to give names to new remedies which at least shall indicate their principal constituents. Thus among the articles described in "New and Nonofficial Remedies" appear such names as arsenoferratin, an organic compound of iron and arsenic; Bornyval, a valeric acid ester of borneol; brovalol, a bornyl bromvalerate; carbosant, a carbonate of sanatol; guaiacodein, a compound of codein and guaiacal; tannismuth, a tannate of bismuth. Therefore the Council recommends that all remedies be given names which shall at least be suggestive of their most characteristic or potent constituents. The Council gives the fullest recognition to the principle that a discoverer has the right to name his discovery and interposes no restriction in the naming of new substances, provided that such names shall not be detrimental to the progress of medicine and thereby work against the welfare and health of the people.

Names which are suggestive of the diseases or conditions in which the remedy is said to be indicated are objectionable because the layman becomes familiar with the names of such remedies and their uses through physicians' prescriptions and is thus led to use them in indiscriminate and harmful self-medication. The many cases of harmful self-medication with such remedies as migrainin, diabetin, purgen, antikamnia, antitussin, which preparations at first were exploited to medical men only, are sufficient to show that such names should be forbidden.

But even if the name of a remedy does not disclose its proposed use to the laity, it is still objectionable if it suggests to the medical man the diseases or conditions in which the remedy is to be used. This for the reason that the thoughtless physician will base his use of the remedy on the name without giving due consideration to the condition and symptoms of the patient.

Recognizing that some therapeutically suggestive names have been applied without any intention of appealing to the laity thereby, and further recognizing the difficulty of changing a name once established, the Council has decided to make no objection to names that are now in use if they are therapeutically suggestive to physicians only. Such articles, if on the market and submitted prior to December 31, 1912, will be considered acceptable in so far as their names are concerned.

The following rules apply to the names of articles proposed for inclusion with New and Nonofficial Remedies:

1. The names of pharmaceutical preparations or mixtures must indicate the most potent ingredients.
2. Names which are in any way misleading will not be accepted.
3. Names which suggest diseases, pathologic conditions, or therapeutic conditions will not be admitted, except as provided under 4.
4. An exception is made for established names of synthetic substances, active principles, and other new substances: For these if submitted prior to December 31, 1912, therapeutically suggestive names may be admitted, provided that the name has been in actual use prior to December 31, 1912, and provided further, that the name is not likely to foster self-medication by the laity.

W. A. PUCKNER, Secretary.

NEW AND NON-OFFICIAL REMEDIES.

Since February 1 the following articles have been accepted for inclusion with New and Non-official Remedies:

Sodium Succinate, Exsiccated, Merck & Co.

Sodium Succinate, Exsiccated, Fairchild Bros. & Foster.

Tablets Oxyntin with Pepsin, Fairchild Bros. & Foster.

Capsules Oxyntin with Nux Vomica, Fairchild Bros. & Foster.

Cornutol, H. K. Mulford Co.

Ampules Cornutol, H. K. Mulford Co.

Digitol, H. K. Mulford Co.

Atophan, Schering & Glatz.

Atophan Tablets, Schering & Glatz.

The following is a list of the articles whose acceptance has been rescinded during the past year and which therefore are not contained in New and Non-official Remedies, 1912.

E. G. Binz Co.:
- Eucaloids.
- Euca-Mul.

Henry C. Blair Co.:
- Iodone.
- Iodone Oil.
- Iodone Ointment.
- Iodone Surgical Dressing and Dusting Powder.

Burroughs Wellcome & Co.:
- Tabloid Ergotinine Citrate & Strychnine Sulphate.
- Tabloid Hypophosgites Comp.

G. W. Carnrick Co.:
- Antithermoline.

Cloftlin Chemical Co.:
- Emulsion Cloftlin.

Eusoma Pharmacal Co.:
- Mercuran.

Victor Koechl & Co.:
- Hypnal.
- Tussol.

Merck & Co.:
- Cupro-Hemol.
- Ichthermol.
- Lithium Ichthyol.

Wm. S. Merrell Chem. Co.:
- Akaralgia.
- Erpiol—Dr. Schrader.

H. K. Mulford Co.:
- Adrin.
- Adrin Compound Vaginoids.
- Adrin Inhalant Comp.
- Adrin Troches.
- Adrin Ointment.
- Adrin Solution 1:500.
- Adrin Suppositories.
- Adrin Tablets 1/65 gr.
- Adrin Tablets Hypodermic 1/100 gr.
- Adrin Tablets Hypodermic 1/200 gr.
- Adrin and Cocaine Tablets.
- Adrin and Sparteine Tablets, Hypodermic.
- Blandine Comp.
- Casca—Laxative.
- Compound Capsules of Glycerophosphates.
- Granular Effervescent Carlsbad Salt (Artificial) with Phenolphthalein.
- Guaiacol Carbonate Comp.
- Tuberculin Ophthalmic Test Solution.
- Tuberculin Ophthalmic Test Tablets.

Reinschild Chemical Co.:
- Regulin.

Schering & Glatz:
- Exodin.
- Tonols.
- Duotonol.
- Quartonol.
- Sextonol.

Schieffelin & Co.:
- Colalin Laxative.
- Elixir Eupnein.
- Hemoquinine.
- Heromal.
- Heroterpine.
- Laminoids Ferruginous (Nascent).
- Neuronidia.
- Uriform.

Sharp & Dohme:
- Compressed Tablets Anesthesin 2½ grs.
- Solution Atoxyl 10 per cent. (sterilized).
- Ampules Solution Atoxyl 10 per cent. (sterilized).
- Ampules Solution Atoxyl 10 per cent. with Novocain 1 per cent. (sterilized).
- Compressed Tablets Atoxyl and Iron.
- Compressed Tablets Atoxyl and Quinine Comp.
- Compressed Tablets Benzosol 2½ grs.
- Compressed Tablets Benzosol and Codeine.
- Compressed Tablets Blaud with Atoxyl.
- Compressed Tablets Pyramidon 1½ grs.
- Compressed Lozenges Orthoform 1 gr.
- Compound Emulsion Petroleum.
- Solution Atoxyl 10 per cent. with Novocain 1 per cent. (sterilized).
- Soluble Hypodermic Tablets Atoxyl 1/3 gr.
- Soluble Hypodermic Tablets Novocain 1/3 gr.
- Soluble Tablets Novocain 1 1/7 grs.
- Tonic Hypophosphites.

F. H. Strong Co.:
- Chologestin.

H. K. Wampole Co.:
- Bismuth Hydrate Comp.

Non-proprietary preparations:
- Barium chloride.
- Cephaeline.
- Coniine Hydrobromide.
- Digitonin.
- Emetine Hydrochloride.
- Gelsemine Hydrochloride.
- Hemoglobin.
- Keratin.
- Quassin.
- Red Gum.
- Sanguinarine Nitrate.
- Sodium Cinnamate.
- Thorium Nitrate.

PAPYRUS EBERS.

Some time ago, announcement was made through the pages of this journal that Dr. Carl H. von Klein had completed an English translation of the Papyrus Ebers, and that its publication in book form depended upon an advance subscription list of one thousand names. As a result of that announcement and the interest shown by Dr. von Klein's friends, six hundred subscription have been secured. The enterprise drags at this point and something must be done to arouse the profession to the importance of preserving this valuable manuscript. Four hundred additional subscriptions must be secured.

The Editor has had an opportunity to examine the elaborate manuscript, which is preserved with the greatest care and affection by the venerable translator, and one realizes how important it is that the author of the translation should see the ideal work of his life through the press. It is a question, in fact, whether the translation will not be lost to science just as Ebers' work was lost to us, by the author taking it with him to his bier, if he is not spared to finish the work of publication.

Dr. von Klein has spent twenty years of odd moments of a busy, useful life, mostly devoted to the literature of our profession, on this work of love, and it will be regrettable if it is now lost when so little will not only preserve it to us, the profession, but give its faithful author the satisfaction of seeing it in print.

The book will consist of 650 pages, 7x10 inches, in two colors (red and black) similar to the original, with six plates, bound in one volume. Subscriptions may be sent directly to Dr. Carl H. von Klein, Medical Department, John Crerar Library, Chicago, Illinois. Dr. von Klein will publish this volume personally, and it will be sold only on subscription.—Reprint from Surgery, Gynecology and Obstetrics, January, 1912, page 94.

NOTICE.

Will all former Internes of the Los Angeles County Hospital please communicate with Dr. C. H. Whitman, Superintendent of the County Hospital, or Dr. W. E. Carter, 402 Lissner Building, Los Angeles, Cal., Secretary of the Membership Committee for Los Angeles County Hospital Alumni Association, stating their present addresses and the date of their service at the Hospital?

O. O. WITHERBEE.
F. D. BULLARD.
W. E. CARTER, Secretary.

CHANGES OF ADDRESS.

Rookledge, P. L., from San Luis Obispo to Lindsay, Cal.

Reis, H. W., from 2103 O'Farrell St., S. F., to 1346 Webster St., S. F.

Mansfeldt, O., from 595 Hayes to 1278 Market St., S. F.

Munter, Leo, from 404 Broderick to 995 Market St.

Roberts, J. Margaret, from Manhattan Place, Los Angeles, to Ferguson Bldg., L. A.

Bauter, L. A., from Sisson to Redding, Cal.

Ross, A. B., from 209 Post St., to 177 Post.

Sukow, J. K., from 648 E. Vernon St., Los Angeles, to Bryson Blk., L. A.

Thompson, Wesley, from Huntington Beach, to Huntington Park, Cal.

Andrews, H. J., from Wright Bldg., Los Angeles, to 104 W. Hollywood Blvd., Hollywood, Cal.

Magee, A. C., from 1153 6th St., San Diego, to Scripps Bldg., San Diego.

McDaniel, J. L., from Gardena, Cal., to Moneta, Cal.

Shelton, Bernard, from Los Angeles to 5th and D Sts., San Diego.

Baker, Fred, from Point Loma to Sefton Blk., San Diego, Cal.

Magee, Thos. L., from 1169 6th St., San Diego, to Scripps Bldg., San Diego.

Smith, Bernard, from 2321 Co. Figueroa St., Los Angeles, to Wright & Callender Bldg., L. A.

O'Neill, A. A., from 4502 California St., to Isolation Hospital, S. F.

Musante, A. S., from 346 Montgomery Ave., S. F., to 346 Columbus Ave., S. F.

Richards, Jas. W., from Pasadena to Pottenger Sanatorium, Monrovia, Cal.

O'Reilly, T. W., from 2179 Hobart Blvd., Los Angeles, to Merchants' Trust Bldg., L. A.

Stivers, C. G., from Tropico, Cal., to 1115 Arapahoe St., Los Angeles.

Swift, S. B., from Marysville to 122 East Main St., Stockton, Cal.

Stephens, W. L., from addresses unknown to Meridian (Sutter Co.), Cal.

Williamson, Wm. P., from addresses unknown to American Nat'l. Bank Bldg., San Diego.

Evans, D. J., from 533 So. Grand Ave., Los Angeles, to 5th and Hill Sts., L. A.

Swauger, H. L., from Oakland to Hobart Mills, Cal.

McIntosh, A. M., from Wright Bldg., Berkeley, to Acheson Bldg., Berkeley.

Kergan, H. S., from 1124 8th St., Oakland, to Macdonough Bldg., Oakland, Cal.

Koons, H. H., from Union Trust Bldg., Los Angeles, to Story Bldg., L. A.

Seymour, F. A., from 357 So. Broadway, Los Angeles, to 307 So. Broadway, L. A.

Kannon, M. M., from Sisters' Hospital, Los Angeles, to 134 No. Spring St., Los Angeles.

Cross, Hugh, from Penngrove to Lincoln, Cal.

Topp, Thos. M., from Turlock, Cal., to Davis Creek (Modoc Co.), Cal.

Caldwell, C. B., from San Francisco to Alexandria Bldg., Napa.

Adams, G. B., from Consolidated Realty Bldg., Los Angeles, to Union Oil Bldg., Los Angeles.

Brinckerhoff, G. E., from 1155 Broadway, Oakland, to Delger Bldg., L. A.

Hogan, G. L., from 840 W. Adams St., Los Angeles, to Citizens' Nat'l. Bank Bldg., L. A.

Claypole, Edith, from Los Angeles to 2826 Garber St., Berkeley, Cal.

Hawkins, G. G., from Middletown to Ione, Cal.

Stone, E. E., from Napa to 1190 Pine St., S. F.

Eddy, Geo. S., from San Fernando Bldg., Los Angeles, to Title Ins. Bldg., Los Angeles.

Gleason, C. D., from 209 Post St., to 177 Post St., S. F.

Taylor, A. H., from 135 Stockton St., to 350 Post, S. F.

Terry, Frances C., from 128 Oak St., Hollywood, to Kerckoff Bldg., L. A.

Eads, E. E., from 431½ So. Spring St., Los Angeles, to 308 Higgins Bldg., L. A.

Riche, E. J., from 971 Menlo Ave., Los Angeles, to Watts, Cal.

Kergan, J. F. C., from S. F. to Macdonough Bldg., Oakland, Cal.

Clark, W. S., from Byrne Bldg., L. A., to Currier Bldg., L. A.

Reed, W. E., from Copp Bldg., L. A., to Higgins Bldg., L. A.

Langdon, S. W. R., from Stockton St., to Yam, Cal.

Zeimer, I. S., from Gallway Bldg., Stockton, to 111 S. San Joaquin St., Stockton.

Peters, Lulu H., from 3472 Stephenson Ave., Los Angeles, to Kaspare Cohn Hosp., Los Angeles.

McVey, C. L., from address unknown to 534 52d St., Oakland, Cal.

Clark, Ernest M., from Oakland Bank of Sav. Bldg. to 326 25th St., Oakland, Cal.

Crittenden, C. S., from Potter Valley, Cal., to 1316 Oak St., Alameda.

Boyd, W. T., from Los Angeles to Riverside, Cal.

Banks, A. E., from Smith Bldg., San Diego, to 752 5th St., San Diego.

March, I. B., from S. F. to San Andreas, Cal.

Cross, H. N., from 130 4th St., Stockton, to Elks' Bldg., Stockton.

Fitzgerald, W. W., from 38 S. California, Stockton, to Elks' Bldg., Stockton, Cal.

Gibbons, Wm. E., from Main and Eldorado Sts., Stockton, to 105 E. Main St., Stockton, Cal.

Hull, J. P., from Sav. & Loan Bldg., Stockton, to Elks' Bldg., Stockton, Cal.

NEW MEMBERS.

Blatherwick, A. A., Los Angeles.
Johnson, Roy H., Los Angeles.
Riche, Edwin J., Watts, Cal.
Harden, C. R., Los Angeles.
Shipman, Chas. G., Ocean Park, Cal.
Cocke, Jno. V., Los Angeles.
Breyer, J. H., Pasadena, Cal.
Shelton, Bernard, San Diego.
Dingeman, F. J., San Diego.
Mickaelson, Lewis, San Francisco.
Murphy, Turnbull Mary, San Francisco.
Stuckey, S. F., Mokelumne Hill, Cal.
Luce, D., Tracy, Cal.
March I. B., San Andreas, Cal.
Stone, Luella Swauger, Oakland, Cal.
Wythe, Stephen, Oakland, Cal.
Kergan, J. T., Oakland, Cal.
Wills, C. A., Centerville, Cal.
Hall, Channing, Oakland, Cal.
Leisenring, H. G., San Diego, Cal.
Smart, Robt., San Diego, Cal.
Beebe, L. J., Woodland, Cal.
Matthews, A. C., Napa, Cal.
Myers, G. R. B., Napa, Cal.
Porter, Wm. C., Napa, Cal.
Reed, Edgar, Chico, Cal.
Howard, A. R., Santa Rosa, Cal.
Cushman, R. A., Santa Ana, Cal.
Doyle, J. T., Santa Ana, Cal.
McVey, C. L., Oakland.
Clark, Ernest M., Oakland.
Stevens, B. S., Woodland.
Lavenson, R. S., Los Angeles.
Stork, V. E., Los Angeles.
Shattuck, H. P., Los Angeles.

RESIGNED.

Porter, W. H., Calistoga, Cal.

DEATHS.

Pettit, Mark I., of Visalia, Cal., died in San Francisco.
Garceau, A. E., San Francisco, Cal.
Breyfogel, E. S., San Francisco, Cal.
Mouser, S. M., San Francisco, Cal.
Winton, H. N., Oakland, Cal.
McNary, Wm. Thos., San Jose, Cal.
Vilas, W. H., Taft, Cal.
Trout, J. H., Los Angeles, Cal.
Edmundson, W. J., Napa, Cal.
Colliver, J. T., San Bernardino, Cal.
White, Jas. Taylor, Oakland, Cal.
Lockwood, M. M., Colusa, Cal.

California State Journal of Medicine.

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PHILIP MILLS JONES, M. D., Secretary and Editor

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All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. X JUNE, 1912. No. 6

EDITORIAL NOTES.

"SOME MEN ARE BORN GREAT," ETC.

There are some among us who, if not too much oppressed by modesty, may consider it a boon that the enterprise of the age occasionally seeks to compensate those who were not born great by thrusting greatness upon them. You may feel constrained to acknowledge that you lack a generous congenital endowment and may be doubtful whether your endeavors have achieved greatness for you, when in walks a representative of modern tendencies and submits for your inspection a series of portraits of illustrious physicians. There you find likenesses of Koch and Lister and Ehrlich and other dii majorum and a few minorum gentium. You inquire in this connection what your visitor expects of you and are thrilled to learn that he merely desires to add your portrait to his gallery of celebrities. You protest your unworthiness to enter such brilliant company, but he assures you that the arbiters at Berlin have carefully investigated your title to appear among the elect. Indeed he himself exhibits a surprising, and flattering, acquaintance with the character and extent of your accomplishments and with the exclusive societies which you adorn, and intimates that it would be affectation to persist in your attitude of humility. And, on second thought, is there not an arrogance of humility? After all, may not those publications of yours which were so lightly considered by you when you produced them before your County Society—may they not among the enthusiastic specialists of a great medical center have found that applause which you deny yourself? For a moment you incline a more attentive ear to his persuasive speech, and then again dubiety. Are you alone in your glory in these remote regions? With misgiving heart, something like Abou ben Adhem, you ask to see the list of those held in equal esteem with yourself. *O tempora, O mores!* The venality of glory! Impecuniosity alone excludes from this hall of factitious fame. You see the names and you hear the price. The latter formidable, and among the former the vain, the brazen and the rapacious, all apparently eager to submit to the process of having greatness thrust upon them. You sigh to think that greatness is not necessarily a distinction.

IMPORTANT CHANGES.

Every member of the Society should read carefully the minutes of the House of Delegates at the Del Monte meeting. A number of important resolutions were introduced and some changes of moment were made. The most important of these is in the matter of dues. The payment of the annual assessment to the State Society was changed from January 1st to February 1st. This allows county society secretaries the whole month of January in which to collect dues from their members. The date of delinquency was advanced from April 1st to March 1st. Any members not reported as in good standing and their assessment paid for the year in advance by March 1st, will be automatically dropped as from the end of the previous year. In other words, we start fresh with January 1st of each year and only those who have been reported and paid for by the first of March are considered as members for that year. This means that any member who neglects to pay his dues before March 1st, loses his protection by the State Society in case he should be sued for malpractice. It is most important that this fact be impressed upon all members. The business of the Society is becoming so large and so important that it is absolutely essential that we stick closely to business methods. It looks like a small matter to let one's dues run for a month or two more or less, but it is not a small matter at all. We must have definite, fixed dates at which dates a given individual is or is not a member of the Society. It is not fair for those who do pay promptly to have to take care of those who do not, and possibly have the Society put to a good deal of expense to do so. There is plenty of time between now and next January to thoroughly instruct your members upon the necessity for prompt payment.

BE YE HUMANE.

Dr. Huntington, in the closing paragraphs of his Presidential address, says: ". . . those interested in medicine, as teachers or students, should be admonished regarding a sentiment which is of exceeding import and finds expression in the command, Be ye Humane. With propriety these words, which suggest the spirit and the substance of the humanities, might be written upon the portals of every school and hospital." The whole address deals with the necessity for higher education in medicine and discusses the

methods and machinery required. But in this discussion of methods and means and higher education, Dr. Huntington did not forget to call strongly to our attention the fact, perhaps too often forgotten, that each patient is not only a "case," but that he is a human being and to be so considered. With the introduction of higher educational work and standards we have, perhaps, come to place too high a value on the scientific consideration of the "case" and to forget, in some measure, the patient as a human entity.

ASSOCIATION BULLETIN.

The January issue of the American Medical Association Bulletin is quite a remarkable document. It is devoted to a statement of the work and the range of activities of the Council on Health and Public Instruction, and all the sub-committees that were combined with and put under the control of this Council. The Secretary of the Council, Dr. Frederick R. Green, is to be highly complimented upon the manner in which he has brought order out of all these chaotic elements and upon the large amount of most valuable educational work that is being continuously done by the Council through his office. It is utterly foolish and hopeless for us to expect any general public health legislation until the people have learned the necessity for it. It is worse than useless for us to try to secure such legislation by sending people to Washington; the demand must come from the people, and it will only come when they know what they need and why they need it. It was one of the wisest things ever done, when the news bureau of the Council was started and when news items of general interest, but of an educational public health nature, were prepared and sent to the newspapers. A lecture bureau is being organized, the idea being to have competent physicians give a number of public addresses in every state, letting the people know exactly what they can do for their own betterment and protection by securing proper public health legislation. Drop a line to the Association, 535 Dearborn avenue, Chicago, and ask for this "Public Education Number" of the Bulletin; it will surprise you to see the range of work that the Association is doing through the Council on Health and Public Instruction.

MISDIRECTED ADVERTISING.

Nearly every publication in this country has commented, editorially, on the *Titanic* disaster. In its magnitude and in the short space of time which elapsed between supposedly the best that life has in it and oblivion, it was so great that, naturally, but few words of all those printed are worth more than passing notice. One exceedingly good expression of opinion is to be found in *Printers' Ink*, a trade publication dealing with advertising and advertisers. The argument of the article in *Printers' Ink* is that the calamity was directly due to a senseless desire on the part of the steamship company to get a lot of free advertising for itself by making a record run for the class of ship of the *Titanic*. Undoubtedly, had the ship come in on the time she was making, the newspapers would have printed columns and columns of articles on the ship, her record, her luxuries, etc. "The terrible tragedy of the *Titanic* was due *primarily* to a false conception of advertising." "This is not the first time that human life has been the price of this wickedly wrong idea of advertising. How many lives have been lost in automobile races? How long would such races exist if the newspapers refused to donate space to them and referred the manufacturers to the regular, paid-for advertising columns?"

ONCE MORE.

Why should you skip this editorial even if it does concern the subject of fee-splitting? If you are a "splitter," read it just to see what we have to say; if you are a worthy member of the profession in spite of the handicap of refusing to resort to the practice, you surely will be interested. Ever so often there creeps into our literature a word here or there decrying the medical commission habit, but who has seemed to care? The few kind words here and now indited are an effort to bring home to the consciousness, not the conscience, of some of us that it is high time to care, nay, it is imperative to care, lest smugness be our undoing. Listen! A certain person named Dosch, who rakes muck for a living, has written some most engaging stuff in *Pearson's Magazine* concerning the habit, or let us call it the addiction, of a large number of the medical profession to fee-splitting. One likes to approach these sorts of diatribes with nares plugged. With that precaution taken, the thing is well worth reading, for while it reeks necessarily of muck, it reeks as strongly of truth, and we believe that when we say truth is not always pleasant, the remark is not original. Hearken! To be discovered is nothing new with us, but to be given effective publicity along these distasteful lines will be a rather novel experience. Now that the subjects of political graft, the eternal foulness of ill-gotten wealth, the disgrace of the sweatshops, etc., are well nigh exhausted, what more natural than that the self-constituted literary reformers should turn to us and our weaknesses? Where can field be found more fruitful? The thing can be averted and should be averted before we are held up as the pretty specimens we should appear. Let us clean house while there is yet time. Let our leading men, some of whom have erred habitually in the matter of fee-splitting, cease their malevolent nefariousness and stand up in attitude militant for the right. Let their militancy be as energetic in this regard as it is in some matters of our printed "ethics." We recall at least one locally eminent member of our profession, who in the old days of the graft prosecution was loud in raising his voice for civic virtue, but who probably that day or a few days before, and certainly afterward, split fees. There are others of us who shout loudly for Roosevelt under the idea that he may be pre-eminently the apostle for all kinds of honesty and decency, but pretty clowns we should appear if our account

books were microscopically searched! Call a halt on anything that is not regular beyond cavil, lest we be made thoroughly ridiculous, and to be that is frightful.

BOARD OF EXAMINERS.

In April the newspapers announced that a shortage had been discovered in the accounts of the Secretary of the State Board of Medical Examiners. The facts of the case seem to be that until very recently the business of the various departments of the state were run in a haphazard manner, each doing about as it pleased and without sufficient business organization or audit. The recently created Board of Control started in to examine all these state activities. In the case of the Board of Examiners, they found that everything was correct so far as the record of names of those admitted, licensed or rejected was concerned; they found that the record of these names showed that all applicants had paid their fee. But they found that a number of cases had occurred in which the name and the fee had not been entered in the cash book. This seems to have been due to a very careless system of receipting and of bookkeeping which has now been entirely corrected. The Secretary of the Board did not dispute the errors, which are readily explainable on the ground of oversight, and at once paid in sufficient to make up the required balance. It is very unfortunate that such a careless system should have been allowed to exist, but we take much comfort from the fact that the very searching examination disclosed no instance of irregularity in the affairs of the board so far as examinations, licensing, etc., are concerned.

A SECRETARY'S VIEWS ON DUES.

In view of the fact that membership dues in most of our county societies are payable in advance, it would seem rational to suppose that members would be only too glad to remit the amount of their indebtedness immediately upon receipt of their society's bill. Nevertheless, getting members to pay their dues has been for many years the most arduous task of the county society secretaries. The San Francisco County Medical Society, up to a little over two years ago, employed a regular collector, who made it his business to stir up the careless and hold-back variety until the dues were paid, and he pocketed 20% as his fee. While a collector, who can be put off from month to month, may appeal to a certain class, the Secretary of the San Francisco County Medical Society felt that the expenditure of 20% was an unnecessary loss, which if continued would eventually mean the raising of the dues by just that amount. He therefore adopted the plan of writing personal letters to delinquents, phoning to others, and in general, getting them to realize the error of their ways. The Society meets four times a month; it maintains a library worthy of far more general use; it pays rent and hires a stenographer and clerk and an assistant librarian; it has in the past prosecuted illegal practitioners. In addition, it pays four dollars per member to the State Society, so that members of the County Society are ipso facto members of the latter, are entitled to medical defense and the other advantages of membership.

Quite recently the Los Angeles County Medical Association adopted a by-law which required members to pay their dues within two months or be suspended. The Secretary of the San Francisco County Medical Society immediately introduced a similar by-law which his Society quite readily accepted. The plan has worked well. The first day that the suspension went into effect but thirty-seven members were thereby affected out of a total of 557 members, a number surprisingly small as compared with what it would have been three, two or even one year ago. Most members receiving suspension notices immediately forwarded checks, many accompanied by notes of apology for "pure carelessness, I assure you," "oversight on my part," etc. A few, meeting the Secretary, expressed themselves as "very sore," and one promised his resignation. The latter when informed that a suspended member could be fired, but could not resign, promptly sent his check. He was furthermore told that if he did resign, his real reason would be published, and finally, seeing the humor of the situation, he wanted to know "who else had got mad."

Judging from the following letter, one would believe that the writer was a very bellicose gentleman, five years past the scrapping age. As a matter of fact, the writer probably knew how the Secretary enjoys this style of literature and wished to vary the otherwise monotonous perusal of his daily mail. The letter follows:

"Dear Bine:

"First time I ever heard of such a rule and why was I the first to get it? I have talked with others who did not get it. First I had a mind to fight it through the courts if necessary, and five years ago would have done so with pleasure and made it be given up. Guess I must be getting mellow with age. Sincerely,

_____."

Seeing that the by-law was published in the program two consecutive months, then passed by the Society and again published for two consecutive months, it is of course unbelievable that members could overlook it.

It may be stated that as a result of the by-law, the Secretary's work is somewhat lighter, and should really be far more satisfactory to all concerned. Anybody, however, with a keen sense of humor, wishing to send facetious missives to the Secretary will confer a favor upon him by giving vent to their mirth. R. B.

CONVULSIONS IN MEDICAL COLLEGES.

Let us first consider the most recent and violent attack of "reorganization fever" and then the various milder manifestations that have occurred in the last very few years in our medical schools. When the members of the Faculty of the Medical Department of the University of California scanned the morning papers of April 10th, they learned that the school had been entirely reor-

ganized and some of them first learned from this newpaper statement, the fact that they had been unceremoniously dropped from their former positions, without the slightest intimation of any proposed action, at a meeting of the Board of Regents held April 9th. It is true that all those connected with the Medical Department of the University had been requested to turn in their resignations some time previous and that this had been done. It is also true that the Medical Department needed reorganization and that every one knew that changes would necessarily have to be made; but there are ways of making changes—and other ways. Men who had given of the best years of their lives a score or more toward the service of the school, might, one would suppose, expect to be told in a courteous manner that they were about to be eliminated and not first learn that fact from a newspaper account of what had been done.

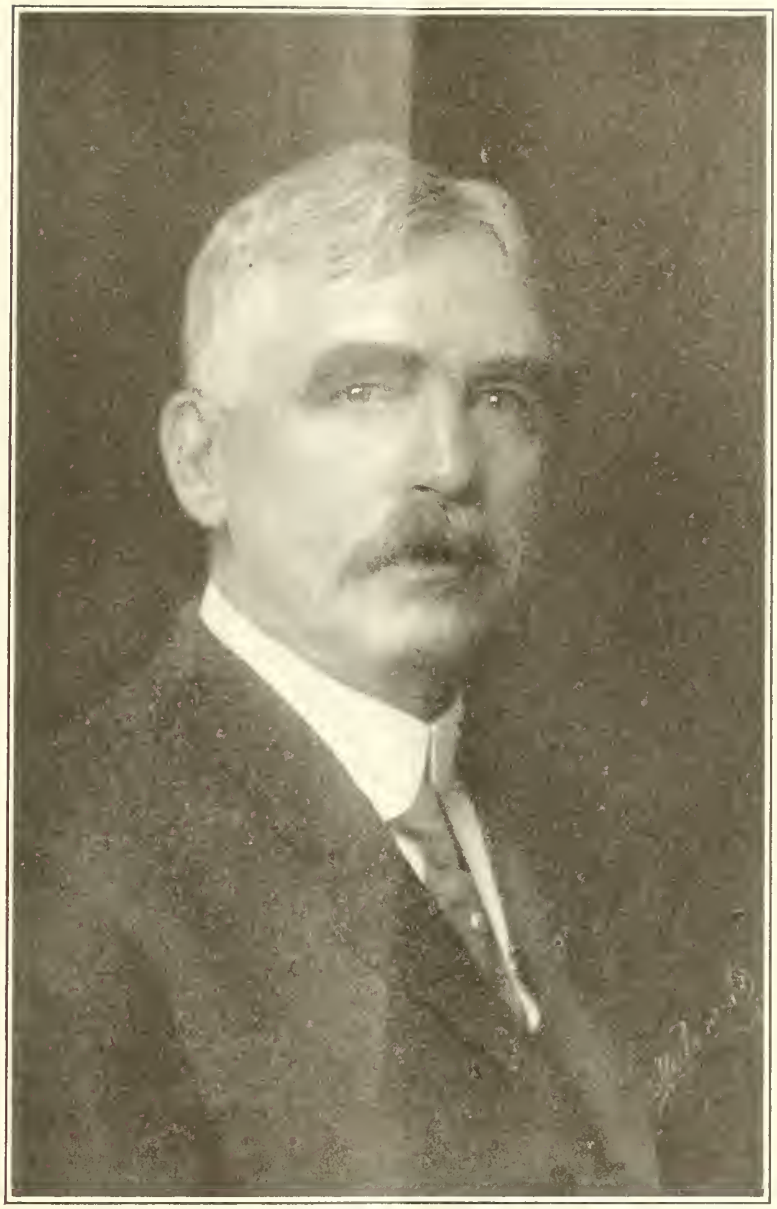
It seems almost unbelievable that a learned institution could possibly do a thing so inexcusably discourteous—to say the least. And these are the bald facts. Men who had spent many years of their lives in hard and earnest work, striving without hope of reward to build up this medical school and to force it to the standards which they knew were right, were dropped in a moment; between two days, as it were; without warning, without consultation, without the most ordinary and simple courtesy; with even less than the formality with which an employer discharges a clerk or a laborer. Does this spirit of violent reorganization indicate a degree of mentality that speaks for confidence in the solidity or advancement or permanency of the new work that is to be done in the Medical Department? It is scarcely possible to contemplate the immediate future of this medical school with feelings of unmixed confidence in its betterment. Will good men care to attach themselves to an institution which is guided by any one capable of such ill-considered, inconsiderate and impetuous discourtesy?

And particularly is this the case when we further take into consideration the admitted fact that there is no necessity for two medical departments of universities of this class—or of the hoped for and proposed class—in San Francisco. The waste involved in the maintenance of two such institutions, is enormous; not alone the waste of brain and of teaching energy, but the actual waste of money. In the commonsenseless effort to equip and maintain two such institutions, at least a half-million dollars will be thrown away. The President, in his address to the State Society, at Del Monte (published elsewhere in this issue) very strongly points out the absolute needs of a proper medical teaching school, as we have come to know it, and the large sums of money necessary to build and maintain such a teaching unit. And the waste does not stop with money or with teaching brains; material, clinical and anatomical, is at once halved; instead of the modern idea of concentration for betterment, we have dissipation. Beginning, then, with the admitted fact that there is no foundation in necessity for two high-class medical departments of universities, we none the less find them existing—or attempting to exist—and we see one of them, as its very first act display a lack of courtesy, a total lack of consideration for others such as we would not expect to find in a group of business gentlemen, let alone scientists connected with a learned institution.

Within a comparatively short time, Stanford University absorbed Cooper Medical College; the University of California took over the Medical Department of the University of Southern California; in turn, the University of Southern California took over a private school, the College of Physicians and Surgeons of Los Angeles, and made it the Medical Department of the University of Southern California. But all of these changes were made quietly and with a full understanding on the part of all concerned therein; there was scarcely a tremor, let alone any convulsive attack. They have all bettered themselves, qualitatively, though it is very much of a question whether they will all survive. There are far too many medical schools everywhere in the United States, and California is not, alas, a glorious exception. Time will work its own sweet way with them, and the fittest will undoubtedly survive.

ANOTHER CONVULSION.

The Association of American Medical Colleges, at its meeting in February, without warning, and apparently in violation of its own by-laws, dropped from membership the Medical Department of the University of Southern California. Up to the present time it has been impossible to extract from the Association, or from any of its officers, one word of explanation as to why this was done. The school was subsequently, and at the request of the Dean, Dr. Bryson, thoroughly examined by a committee of the Board of Medical Examiners and by an examiner appointed by the Association. The report shows that the school more than complied with every known requirement of the Association and was not open to criticism of any sort on any essential matter. In the latter part of April the college was, we are informed by Dr. Bryson, advised that it had been reinstated in membership. But we are in as much ignorance of the reason for this action as we were for the action of suspension. It would seem to be highly desirable for the Association to change some of its officers and secure others who will at least be willing to attend to their duties so far as to supply official information when it is officially requested. (This is not intended as a criticism of the Secretary, Dr. Zapffe.) It is a pleasure to record the fact that the school is in good standing and complies in every particular with the required standards.



THOMAS W. HUNTINGTON, A. B., M. D.

Dr. Thomas Waterman Huntington was born in Rockford, Illinois, in 1849. He removed to Vermont in 1864, and graduated at the University of Vermont, in 1871, receiving the degree of Bachelor of Arts. He received his medical degree from the medical department of Harvard University in 1876, and entered practice in eastern Nevada in 1876. In 1882 he removed to Sacramento, having been appointed Assistant Surgeon at the Central Pacific Railway Hospital. He was appointed Chief Surgeon of the Central Pacific Hospital (afterward the Southern Pacific) in 1886. He resigned in 1899 to accept the position of Professor of Clinical Surgery in the University of California, from which he has recently resigned.

Married in 1881 to Miss Harriet Olive Pearson of Dixon, California. Two children, Thos. W., Jr., and Emily H.

Society Affiliations: Honorary member of the Sacramento Society for Medical Improvement; the Northern District Society; San Francisco County Medical Society; the California Academy of Medicine; State Medical Society of California; the American Medical Association; the American Surgical Association.

At the present time he holds the position of Chief Surgeon of the Western Pacific Railway Co. He is also a member of the Medical Reserve Corps of the United States, as First Lieutenant.

MINUTES OF THE HOUSE OF DELEGATES OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA, FORTY-SECOND ANNUAL MEETING.

The House of Delegates was called to order at 8:45 p. m., April 16, 1912, Del Monte, by the President, Dr. Huntington.

Roll call disclosed 61 Delegates present and the President declared the House in session and ready for business.

Report of the Secretary was read. (Printed elsewhere in this issue.)

Reference Committee on Reports and New Business. Moved by Parkinson, seconded and carried, that a Reference Committee of three on Reports and New Business, be appointed by the President. The President appointed as such committee J. H. Parkinson, Chairman, René Bine and F. R. Burnham.

Report of the Secretary was then referred to this committee.

Report of the Council was then read by the Chairman, C. G. Kenyon, and referred to the same committee. (Printed elsewhere in this issue.)

Report of the Editor; included in the report of the Secretary.

Report of the Treasurer; none, except the last bank statement.

Report of Standing Committees. A verbal report was presented by the Chairman of the Committee on Public Policy and Legislation.

New Business.

René Bine introduced the following resolution which was referred to the Reference Committee:

In order to make it possible to consider the matter of the prosecution of illegal practitioners at to-morrow night's session of this House of Delegates,

"Be it resolved that the per capita assessment to the Medical Society of the State of California be increased from $3.00 to $4.00 (in addition to the $1.00 subscription to the Journal), the extra one dollar so raised to go into a special fund under control of our Council, to be used in the work of prosecuting illegal practitioners in California."

Reports of Industrial Accidents. The Secretary presented a letter from the San Francisco County Medical Society referring to compulsory reports from physicians. The letter (which here follows) was referred to the Reference Committee.

April 3, 1912.

Medical Society of the State of California,
930 Butler Building, San Francisco.

Gentlemen—There have been numerous complaints made to this Society in regard to an Act to provide for the reporting of injuries to the Industrial Accident Board by attending physicians. Physicians are ordered to keep rather lengthy records of their cases and to fill in lengthy report blanks for the use of the Board, for all of which they receive no compensation.

It is claimed that similar bills have been found unconstitutional in other parts of this country and this Society hereby requests your Society to investigate this matter and see whether or not something can be done to amend or repeal this Act so that physicians will receive compensation in proportion to the work entailed. Enclosed please find copy of bill.

Very truly yours,
RENÉ BINE, Secretary.
W.

The text of bill follows:

REPORTS OF INDUSTRIAL ACCIDENTS.

Chapter 53.

An Act to provide for the keeping by employers of a record of injuries suffered by their employees; the reporting of such injuries to the Industrial Accident Board by employers and attending physicians; the keeping by employers and insurance companies of records of claims for injuries suffered by employees and of compromises and settlements made therefor and requiring the reporting thereof to said board; and fixing a penalty for refusal or neglect to keep such records or make such reports.

[Approved January 10, 1912.]

The people of the State of California do enact as follows:

Section 1. Every employer of labor in this state shall keep a full, true and correct record of every personal injury suffered by his or its employees, arising out of or in the course of the employment, and resulting in death, or in disability extending over a period of a week or more. Within fifteen days after the happening of any such personal injury, a written report thereof shall be mailed by the employer to the Industrial Accident Board informally or on blanks to be provided by said board for this purpose. The said report shall contain the name of the employer, location of place of employment, nature of employment, name, address, age, nationality, sex and occupation of the injured person, length of time the injured person had worked at the particular employment previous to injury, date and hour of the day or night of the accident, the hour at which the injured employee began work on the date of the accident, nature of the injury, cause of the injury and rate of wages of the injured employee.

Sec. 2. Upon the termination of the disability of the injured employee or at the expiration of sixty days from the date of the accident, if the disability should extend beyond such period, the employer shall mail to the Industrial Accident Board a supplemental report in relation to such disability, informally or on blanks to be provided by said board for this purpose. Such report must contain complete statements as to any claim made by the injured employee for indemnification for the injury sustained, payment made to him or in his behalf for medical, surgical or other care, claim for compensation or damages made for such injuries and any compromise or settlement of claim for compensation or damages entered into between the employer and such injured employee, his heirs, dependents or legal representative. In the event that any payment shall be made to such injured employee, or his dependents at any time thereafter, in compromise or settlement of a claim for compensation or damages, the amount of such payment shall be forthwith reported by the employer to the Industrial Accident Board.

Sec. 3. Every physician who attends any such injured employee shall keep a record of his case. Within ten days from the date of his first attendance upon the injured employee, he shall mail to the Industrial Accident Board a report, informally or on blanks to be provided by the said board for this purpose. The said report shall contain the name and address of the employer, name, address, sex and age of the injured employee, date of accident, description of the injury, probable nature and extent of disability. Upon the termination of the disability of the injured employee or the termination of said physician's attendance upon his case, he shall forthwith mail to the Industrial Accident Board a supplemental report in relation to such case describing the physical condition of the injured employee, his disability, convalescence or discharge from the doctor's care.

Sec. 4. Every person, firm, association or corporation insuring against the liability of employers for damages or compensation for personal injury

to employees or indemnifying any employer for, or on account of any such liability shall keep a record thereof, and shall within the first five days of each and every month, report in writing to the Industrial Accident Board, informally or on blanks to be provided by said board for this purpose, every such injury to employees reported to it, every claim for damages or compensation for such injury filed with such person, firm, association or corporation and any settlement or compromise of any such claim for damages or compensation whether made with such injured employee, his heirs, dependents or legal representative.

Sec. 5. Every employer, physician or insurance company, firm or association, shall furnish to the Industrial Accident Board all further information required by it in order to constitute a substantially complete and accurate history of each injury and the damages or compensation paid therefor.

Sec. 6. The record required to be kept in pursuance of the provisions of this Act shall at all times be open to inspection of the Industrial Accident Board or any member thereof, or any examiner appointed thereby. Any statement contained in such report shall not be admissible as evidence in any action arising out of the death or injury of any employee by reason of the accident reported.

Sec. 7. It shall be unlawful for any person, firm, corporation, agent or officer of a firm or corporation to fail, neglect or refuse to comply with any of the provisions of this Act. Any person, firm, corporation, agent or officer of a firm or corporation that violates or omits to comply with any of the provisions of this Act, shall be guilty of a misdemeanor for each and every offense and shall be, upon conviction thereof, punishable by fine of not less than ten dollars or more than one hundred dollars or by imprisonment for not more than thirty days, or by both such fine and imprisonment.

Sec. 8. Nothing in this Act shall apply to employers of labor engaged in farming, dairying, agricultural or horticultural pursuits, in poultry raising or domestic service.

Public Health Exhibit at the Panama-Pacific. The Secretary presented a communication from G. H. Richardson calling attention to the importance of having a proper Public Health exhibit at the Panama-Pacific Exposition and suggesting that a committee be appointed by the State Society to cooperate with other committees and to confer with the Directors of the Exposition. This was referred to the Reference Committee.

Eye, Ear, Nose and Throat Section. C. F. Welty presented the following request from the San Francisco County Society, which was referred to the Reference Committee:

San Francisco, Cal., March 16, 1912.

To the House of Delegates of the Medical Society of the State of California.

Gentlemen—The Eye, Ear, Nose and Throat Section of the San Francisco County Medical Society, respectfully request that you create a section, to be known as the "Eye, Ear, Nose and Throat Section of the Medical Society of the State of California."

Respectfully submitted,

WILLIAM F. BLAKE, Chairman.

Approved by San Francisco County Medical Society. RENÉ BINE, Secretary.

Joint Meeting with the Pacific Coast Oto-Ophthalmological Society. C. F. Welty presented the following request which was referred to the Reference Committee:

House of Delegates of the Medical Society of the State of California.

Gentlemen—The Pacific Coast Oto-Opthalmological Society respectfully requests a joint session with the Eye, Ear, Nose and Throat Section of the California State Medical Society. Our constitution provides that we meet in California once in three years. The first session in California will be in 1915. Furthermore, we wish to cooperate the same way every three years. The charter members of the society number about one hundred of which two-thirds are now members of the California State Medical Association.

Respectfully submitted,

C. F. WELTY,
Secretary of the Executive Committee.

Change Meeting Days. W. S. Franklin presented the following resolution which was referred to the Reference Committee:

Moved to amend Article II, Section 1 of the By-Laws to read "The annual meetings of this Society shall convene on the third Thursday in April of each year."

Psychopathic Association. A. E. Osborne introduced the following resolution which was referred to the Reference Committee:

Whereas during the last two years there has been in operation in Los Angeles County an organization called the Psychopathic Association, having for its aims the securing of more adequate accommodations for the insane, to conserve their rights before commitment, and to aid in their aftercare, and which is now turning its attention to an effort to secure a colony for epileptics, and

Whereas, this should be a state-wide movement, and

Whereas, these and kindred subjects in connection with mental hygiene have not received in California the attention which their importance deserves, now therefore be it

Resolved that this Society regards the formation of a state-wide organization with these objects as very desirable and that a special committee be appointed for this purpose.

Contract and Lodge Practice and Hospitals. G. E. Tucker introduced the following which was referred to the Reference Committee:

On behalf of the Committee on Contract and Lodge Practice, I move that the resolutions on Contract Practice as printed on page 14 and 15 of the Roster of the Los Angeles County Medical Association, issued April 5, 1912, be adopted by the Medical Society of the State of California.

(Note: These resolutions will be found in full a little later in the minutes, under a similar heading, introduced by George H. Kress for the Los Angeles County Medical Association.)

Ophthalmia Neonatorum. The following resolutions were introduced by H. Horn and referred to the Reference Committee:

Whereas, the American Medical Association, the National Society of Obstetricians and various societies of Ophthalmologists of the United States have recommended and approved the enactment of laws furthering the prevention of ophthalmia neonatorum;

Be it resolved, That this society hereby recommend the enactment of a law, by the legislature of California, making the use of Credé method for the prevention of ophthalmia neonatorum obligatory upon the physicians, midwives and others having to do with the birth of children;

And be it further resolved, that the president of this Society be empowered to appoint a com-

mittee, consisting of the president of the California State Society for the Prevention of Blindness, the secretary of the State Board of Health, the health officers of the two largest cities in the state and two others, to actively further legislation in this matter.

Time of Meeting. The following was introduced and referred to the Reference Committee:

It is resolved that the By-Laws be changed in regard to the time of meeting of this Society, the meeting to take place at some time when the nearness of the meeting of the A. M. A. does not interfere with the attendance of the meeting of this Society.

Change in Medical Law. The following was introduced by George H. Kress and referred to the Reference Committee:

April 12, 1912.

To the House of Delegates of the Medical Society of the State of California:

Gentlemen—The Board of Councilors of the Los Angeles County Medical Association respectfully request that the House of Delegates of the Medical Society of the State of California take steps at the Del Monte meeting to consider a plan of action on the following propositions:

1. A state law in California, modeled somewhat after the California Dental and Pharmacy laws whereby an annual tax of two dollars would be levied on all licensed practitioners of the healing art in California, the money so raised from the said tax to be deposited in the State of California Treasury and to be used by the California State Board of Medical Examiners in enforcing the Medical Practice Act of California; and

2. To consider an amendment to the Medical Practice Act of California, whereby it would be demanded of all schools of the healing art which are not now under legal obligation by the present state medical law to live up to the standard of preliminary education for medical students as set by the Association of American Medical Colleges, that all such other schools of the healing art which are now entitled to practice in California, shall require the strict enforcement of a full four-year high school course standard of preliminary education for all their matriculants, such examinations for preliminary education to be conducted if possible by examiners appointed by some such non-partisan educational body as the regents of the University of California.

Respectfully submitted,

THE BOARD OF COUNCILORS OF THE LOS ANGELES COUNTY MEDICAL ASSOCIATION.

By George H. Kress, Secretary.

Dental Law.

"Before any person can practice dentistry in this state, he shall obtain a license to do so from the board of dental examiners. Each application shall be accompanied by a fee of twenty-five ($25) dollars, which shall in no case be refunded. Such license shall expire by limitation. An annual license fee of two ($2) dollars shall thereafter be paid annually by every person practicing dentistry in this state, and it shall be the duty of said board to issue to all regularly licensed dentists upon application and the payment of $2, if made before the expiration of the applicant's license, a new license which shall entitle said person to practice dentistry in this state for a period of one year, and which license shall expire upon the following first day of May. Said board shall have no authority to issue an annual license to any person who is not a regularly licensed dentist and who has not paid said license fee of $2 on or before the date when his previous license expired. Every person who was a regularly licensed dentist and who failed to pay said annual license of $2 before the expiration of his license, shall be considered as if no license had ever been issued to him, and before he can again practice dentistry in this state, shall make a new application therefor as in the first instance and pay the regular fee of $25 therefor, except that he shall not be required to submit to any examination. All renewal fees collected under the provisions of this section shall be used exclusively for the prosecution of violators of this act and for expenses of collecting said fees. All moneys received under this act shall be deposited in some reliable bank in the name of the board, and shall be withdrawn only on the joint check of the president and secretary of the board." (Amendment approved April 6, 1909. Stats. 1909, p. 807, General Laws.)

Every person holding a certificate from said board shall renew annually their registration with said board; and every registered pharmacist, and every assistant registered pharmacist who desires to retain his registration on the books of the board of pharmacy in this state shall annually, after the expiration of the first year's registration and on or before the first day of July of each succeeding year, pay to the secretary of the board of pharmacy a renewal fee to be fixed by the board which shall not exceed two dollars for registered pharmacist and one dollar for assistant registered pharmacist, in return for which fee a renewal certificate of registration shall be issued. In case any person defaults in payment of said fee his or her registration may be revoked by the board of pharmacy on sixty days' notice, in writing from the secretary, unless within said time the fee is paid, together with such penalty not exceeding ten dollars, as the board may impose. Upon payment of said fee and penalty the board must reinstate the delinquent's registration." (Amendment approved March 21, 1907. Stats. 1907, p. 767, General Laws.)

Division of Fees; Contract Practice; Expert Medical Testimony. The following resolutions were introduced by George H. Kress and referred to the Reference Committee:

April 12, 1912.

To the House of Delegates of the Medical Society of the State of California.

Gentlemen: The Board of Councilors of the Los Angeles County Medical Association requests permission to submit to the House of Delegates of the Medical Society of the State of California the resolutions hereto appended, with the request that the State Society House of Delegates adopt these resolutions to apply also to the Medical Society of the State of California, or modify them to adapt them to the needs of the Medical Society of the State of California.

The resolutions referred to are as follows:

1. Resolutions Regarding Division of Fees, as given on page 14 of the 1912 Roster of the L. A. Co. Med. Assn.

2. The Resolutions on Contract Practice as given on pages 14 and 15 of the said Roster.

3. The Resolutions on Expert Medical Testimony as given on page 16 of the said Roster.

Respectfully submitted.

The Board of Councilors of the Los Angeles County Medical Association.

Per GEORGE H. KRESS, Secretary.

RESOLUTIONS ON DIVISION OF FEES.

(Approved December 16, 1910.)

Whereas, It has been brought to the attention of the Board of Councilors of the Los Angeles County Medical Association that the secret division of fees between the surgeon and the general practitioner referring a patient to the surgeon, has existed and still prevails among some members of this Association, and

Whereas, Such secret division of fees tends to

place a premium upon the cupidity of the surgeon rather than upon his skill, judgment and ability as an operator, and is subversive of good ethics and the highest consideration of the patient's welfare; therefore be it

Resolved, That the Board of Councilors of this Association expresses its condemnation of any division of fees between a surgeon or specialist and the general practitioner referring the patient, without the full knowledge and understanding of such division by the patient; and to this end the Councilors recommend that the general practitioner referring the patient shall have a larger recognition by the surgeon before the patient, for the services which such physician has rendered in making the diagnosis and in his attention to the patient previous to the operation, as well as at the time the operation is performed; and be it further

Resolved, That the Board of Councilors of this Association shall in future consider instances of the secret division of fees between surgeon and physician a sufficient ethical cause for the trial and expulsion of any member of this Association; and be it further

Resolved, That these resolutions be spread upon the minutes and that a copy be sent to each member of this Association, to the Secretary of each County Medical Association in California, and to the Secretary of the Medical Society of the State of California.

RESOLUTIONS REGARDING CONTRACT PRACTICE AND HOSPITALS.

(Submitted by a Special Committee appointed to investigate these matters and approved by Board of Councilors on March 22, 1912.)

Whereas, The relations between hospitals and kindred associations and the medical profession have, at the present time, come to be such that the skill, knowledge, judgment and experience of the physician is sold and bartered for by promoters and financiers of these establishments, the physician receiving little or nothing for his services; and

Whereas, These facts and conditions are opposed to the best interests of our profession; and

Whereas, The physician should receive his proper compensation from those able to pay, while willing at all times to give his services gratis to the poor; therefore be it

Resolved, First—That the visiting staff of any Los Angeles County hospitals shall not receive any compensation from the hospitals for the treatment of patients and only the members of the resident staff thereof may receive a salary.

Second—That patients entering a hospital, except those having their own physician, shall at once be assigned to the member or members of the hospital staff having charge of their particular class of case; and when so assigned the matter of the physician's compensation shall be arranged entirely by said members of said staff and said patient without the intervention of the hospital or its executives or agents.

Third—That a hospital may make rates, sign contracts with patients or others, for board, shelter, medicines and for general care and nursing; but in no case shall the hospital or any one in authority therewith fix the physician's fee for services rendered to patients or to others, nor interfere in the matter of compensation for medical or surgical services.

Fourth—That no member of the Los Angeles County Medical Association shall be permitted to render services to any member or members of a so-called Hospital Association, Corporation, Lodge, Society or other association, organization or institution whose purpose it is to provide medical or surgical services to its members at an agreed stipulation per member; provided, that the above clause shall not apply to members of this Los Angeles County Medical Association who may treat a member or members of such organizations as mentioned in the above clause, when such member or members of such above organizations are heads of families having an average income of less than seventy-five dollars monthly; and provided further, that the above clause shall not apply to industrial corporations who, as a matter of humanity or emergency, need furnish medical or surgical aid to the bona fide employees appearing on their pay-roll; nor to the physical examinations of candidates for life insurance.

And it is further stipulated, that any member of this Los Angeles County Medical Association who violates this section four of these resolutions after the date set for them to go into effect shall thereupon and therewith automatically subject himself to a denial of the membership privileges of this Los Angeles County Medical Association, the Secretary-Treasurer being instructed to refuse dues from any such member; and if dues have been accepted, then by a return of such dues, the membership privileges of such a member who has violated this section four shall automatically lapse; and in the Bulletin of the Association shall be printed his name under the heading, "Crossed from the Roll of Membership for Violation of the Resolutions on Contract Practice."

Fifth—That no hospital shall maintain an outside dispensary through the services of its resident staff or other salaried physicians; but that members of the salaried staff may attend outside calls, provided the matter of compensation is left to said members and the party accommodated. This shall not apply to such institutions of medical instruction recognized by the State Board of Medical Examiners, which, for educational purposes, maintain a free dispensary for the needy poor.

Sixth—That on, prior to or shortly after these resolutions go into effect on January 1, 1913, the Los Angeles County Medical Association, through its Board of Councilors, shall appoint a Commission of three to nine members to be known as "The Hospital Commission"; that then and thereafter said Hospital Commission shall be one of the regular standing commissions of the Los Angeles County Medical Society, and that its term of office shall be the same as the other regular standing commissions of the Los Angeles County Medical Society.

Seventh—That it shall be the duty of the Hospital Commission to keep informed as to the practice of the various hospitals touching the matter herein treated, and to classify said hospitals as Approved and Not Approved Hospitals. An "Approved Hospital" signifies a hospital which complies with the spirit of these resolutions. A "Hospital Not Approved" is one which does not comply with the spirit of these resolutions, and therefore is not acceptable to the said Commission.

Eighth—Further, this Commission shall make a quarterly report to the State Medical Journal of California, to the Los Angeles County Medical Society, and through the medium of the Society to every member of the profession in the City and County of Los Angeles, calling attention to any deficiencies in any hospital which should be rectified before physicians be recommended to send patients to said hospital.

Ninth—These resolutions shall be printed in the Bulletin of the Los Angeles County Medical Association, so that every member therof may have due notice and act accordingly; and these resolutions shall go into effect on January 1st, 1913.

RESOLUTIONS REGARDING EXPERT MEDICAL TESTIMONY.

(Adopted by the Board of Councilors on April 9, 1912.)

Whereas, This Los Angeles County Medical Association recognizes the serious objections inherent in, and views with disapproval, the prevailing

method of procuring expert evidence in cases at law in which physicians and surgeons acting nominally as advisers of the Court, are employed as witnesses and compensated by the respective litigants without the advice or co-operation of the Court, being thus subject to partisan influence while in the discharge of what should be a non-partisan duty; and

Whereas, This Association is of the opinion that the usefulness of the physicians and surgeons, both to courts and to litigants, in controversies requiring special medical and surgical knowledge and experience, might be greatly extended and the ends of justice more fully conserved if a wiser order of procedure were instituted; now therefore be it

Resolved, That the officers of this Association be instructed to call the provisions of the appended ethical principles bearing upon this subject, to the attention of the Judiciary of California, both State and Federal, and to the attention of the leading attorneys at law, either personally or through their bar associations, or both, with the request that they co-operate with this organization as opportunity offers in bringing about the changes desired.

The Appended Ethical Principles referred to are as follows:

"For the purpose of improving present court procedure in its relation to the physicians and surgeons, and to the practice of the healing art, and for the purpose of increasing the efficiency of the medical profession as an aid to the settlement of questions in controversy, this Association believes it desirable to restrict such engagements as soon as practicable to the following conditions:

"a. As a witness when appointed by and compensated through the agency of the Court.

"b. As Court Commissioner, referee or other examiner, preferably sitting with an attorney, to take evidence involving questions cancerning the healing art.

"c. As arbitrator appointed by either party to the controversy, or by both parties jointly through the agency of the Court or otherwise, and compensated by both parties conjointly.

"d. As special adviser to either contestant.

"This Association advocates the early adoption of such changes in the methods of court procedure."

(Excerpt from Opinion of Justice Henshaw of the California Supreme Court in Estate of Dolbeer, 149 Cal., 243-4.)

"This kind of expert testimony, given under such circumstances, even the testimony of able and disinterested witnesses, as no doubt these were, is in the eye of the law of steadily decreasing value. The remedy can only come when the state shall provide that courts and not the litigants shall call a disinterested body or board of experts who shall review the whole situation and then give their opinion with their reason therefore to the court and jury regardless of the consequences to either litigant. So and so only can it be hoped to remove the estimate of infirmity which attaches at the present time to this kind of evidence. In the case at bar the hypothetical question presented to these experts eliminated all the facts overwhelmingly proved in favor of Miss Dolbeer's sanity, bore with emphasis upon and threw into prominence trifling circumstances, and contained many statements not justly borne out by the evidence. It thus presented a portrait of Miss Dolbeer's life and mind absolutely lacking in vraisemblance. All perspective was eliminated, all proportion destroyed, and the picture was as untrue to the original as is a fantastic and distorted shadow cast by a flickering and uncertain light a false portrayal of the reflected object."

Consultation with Dropped Members, re *Contract Practice.* The following resolution was introduced by F. H. Paterson and referred to the Reference Committee:

Resolved, That it is the sense of this Society that in those counties where the medical societies have taken a definite stand against the contract and lodge practice evil, it be urged that the members of this Society refuse to consult with or aid in any manner, members of the medical profession in disfavor with the local societies for this character of practice.

County Health Officers. The following was introduced by G. F. Tucker and referred to the Reference Committee:

Resolved, That the State Society go on record as favoring the changing of County Registrars from County Recorders to County Health Officers.

Non-Practicing Members. The following was introduced by H. A. L. Ryfkogel and referred to the Reference Committee:

Resolved, That a committee be appointed to consider such changes in the Constitution and By-Laws as may be necessary to admit to the Society non-practicing physicians occupying teaching positions and such members of the U. S. Army, Navy and Marine Hospital services as may be temporarily residing in this state.

President on Council. The following was introduced by H. Horn and was referred to the Reference Committee:

Resolved, That the President, upon election, become an active member of the Board of Councilors of the Medical Society of the State of California.

There being no further new business to be introduced, the minutes of the session were read as above printed and approved as read.

The House then adjourned to meet at 8 P. M., April 17th, 1912.

SECOND SESSION.

April 17th, 1912, 8:40 P. M.

The House of Delegates was called to order by the President at 8:40 P. M. and 54 Delegates responded to the first roll-call; others came in and were seated subsequently. The President declared a quorum present and the House ready for business.

Place of Meeting. Riverside was nominated by Geo. Tucker; Santa Barbara was nominated by D. A. Conrad; San Diego was nominated by E. M. Fly; San Francisco was nominated by C. G. Kenyon; Santa Cruz was nominated by J. B. Thomas. All of the nominations were withdrawn except that of Santa Cruz; on motion duly carried, the Secretary was instructed to cast the ballot of the House, which was done, and Santa Cruz declared the place of next meeting.

President. O. D. Hamlin, of Oakland, was nominated by G. P. Reynolds and seconded by Dudley Tait. There being no further nominations, the nominations were declared closed and on motion the Secretary was instructed to cast the ballot of the House. This was done and O. D. Hamlin declared elected President for the ensuing year.

First Vice-President. Saxton Pope, of Watsonville, was nominated by G. G. Reinle, and there being no other nominations, on motion the Secre-

tary was instructed to cast the ballot of the House, which was done and Saxton Pope declared elected.

Second Vice-President. Fred. H. Tebbe, of Weed, was nominated by René Bine, and there being no other nominations, the Secretary was instructed to cast the ballot of the House, which was done.

Secretary. Philip Mills Jones was nominated by Geo. H. Kress, and there being no other nominations, the President was on motion instructed to cast the ballot of the House, which was done.

Councilors; First District. Orange, Riverside, San Bernardino and San Diego Counties; vice F. R. Burnham, term expired. C. Van Zwalenburg, of Riverside, was nominated by E. M. Fly, and there being no other nominations, the Secretary was instructed to cast the ballot of the House, which was done.

Third District. San Luis Obispo and Monterey Counties. T. C. Edwards was nominated by E. E. Kelly to succeed himself, and there being no other nominations, the Secretary was instructed to cast the ballot of the House, which was done.

Fourth District. Fresno, Kings, Tuolumne, Merced, Mariposa, Madera and Stanislaus Counties. George H. Aiken was nominated by J. R. Walker to succeed himself, and there being no other nominations, the Secretary was instructed to cast the ballot of the House, which was done.

At Large. H. A. L. Ryfkogel was nominated by W. F. Blake to succeed himself, and there being no other nominations, the Secretary was instructed to cast the ballot of the House, which was done.

Committee on Scientific Work; one member to serve four years. Ray L. Wilbur was nominated by René Bine, and there being no other nominations, the Secretary was instructed to cast the ballot of the House, which was done.

Committee on Public Policy and Legislation; two members to be elected to serve for three years. J. H. Barbat was nominated by S. J. Hunkin; C. W. Bryson was nominated by O. O. Witherbee, and there being no other nominations, the Secretary was instructed to cast the ballot of the House, which was done.

Committee on Arrangements. P. T. Phillips, J. B. Thomas and F. H. Koepke were nominated, and there being no other nominations, the Secretary was instructed to cast the ballot of the House, which was done.

Committee on Public Health. N. K. Foster, E. C. Fleischner, J. W. James, Geo. A. Hare and F. R. Burnham were nominated, and there being no other nominations, the Secretary was instructed to cast the ballot of the House, which was done.

Delegate to the American Medical Association; to serve for two years. Geo. H. Kress was nominated by A. S. Lobingier; Geo. A. Hare was nominated by Geo. H. Aiken; Geo. A. Hare then withdrew his name, and there being but one nominee, the Secretary was instructed to cast the ballot of the House, which was done.

Alternates to the American Medical Association; three to be elected to serve one year. Geo. H. Hare, V. G. Vecki and W. F. B. Wakefield were nominated, and there being no other nominations, the Secretary was instructed to cast the ballot of the House, which was done.

Report of the Reference Committee on Reports and New Business. This report was first read as a whole and was then taken up section by section. Amendments were offered to several of the sections as read; in most cases the amendments were accepted by the Committee as substitutes and were at once made a part of the original section or recommendation; when this action was *not* followed it will be so indicated in the minutes.

(1). *President's Address.* (a) "Poor boy" problem. The Committee agrees with the statement in the address that the plea for the "poor boy" is usually a plea for the poor school, and it believes that no thoroughly worthy or competent "poor boy" ever has been, or ever will be, debarred from the study of medicine, by reason of limited means.

(b) The Committee feels that the Journal should call editorial attention to the advantages of higher education in relation to scientific medicine and it endorses the position of the President as to the money value to the state of such training.

(c) The Committee heartily endorses the sentiment of the address that the human element should never be lost sight of in our professional dealings. In these days of general commercialism and relentless industrial competition there is danger of the physician losing sight of the basal elements of his relation to his patient—counselor, helper and friend. The highest type of medical man is still, like St. Luke, the good physician.

(d) The Committee recommends that, subsequent to its appearance in the JOURNAL, the President shall publish in lay journals such portion or portions of his address as will best further the purpose for which it was written.

(2). *Report of Special Committee on Athletics.* The Committee recommends that, as the resolution attached to the report carries an appropriation, the whole matter be referred to the Council.

(3). *Report of Secretary.* The Committee recommends the adoption of the recommendation that Section 13 of Article VIII of the By-Laws be amended by changing the date of delinquency from April 1st to March 1st and providing for automatically dropping such delinquent members, in connection with the medical defense feature of the Society.

(4). *Report of Council.* (a) Medical defense: Recommends that editorial mention be made of change of date of delinquency together with a general summary of the work accomplished in this direction by the Society.

(b) Appeal of Dr. J. H. Hurst: Committee recommends that the action of the Council in declining to interfere with the findings of the Santa Barbara County Medical Society be confirmed.

(c) Annual assessment: Committee recommends that the assessment for 1913 be continued at the figure of $3.00 (including the medical defense feature) and $1.00 subscription to the JOURNAL.

(5). *Increasing assessment* from four to five dollars to provide funds for prosecution of illegal practitioners. The Committee recommends, in accordance with Section 4, paragraph (c) of this report, that the annual assessment be not increased at this time, but that the question be submitted to the County Societies at the earliest opportunity. If the vote of the Societies, as returned, shows a two-thirds majority for the proposition, the Committee recommends that the Council be instructed to levy an additional assessment, at a meeting, regular or special, after July 1, 1912, when the necessary returns have been made.

(6). *Industrial accident reports.* The Society should understand that chapter 53 relating to the reporting of industrial accidents, and the keeping of a record of same, is now in full force and effect. Two to three reports are or may be required in every case. The penalty ranges from $10 to $100 with imprisonment, limited to 30 days, possibly included. The Committee recommends that this question be referred to the Committee on Public Policy and Legislation, with instructions to procure, if possible, a modification of the law or due compensation for the physician.

(8). *Exhibit of Hygiene and Public Sanitation Panama-Pacific Exposition.* The Committee recommends that the communication on this subject be referred to the Council for action.

(9). *Eye, Ear, Nose and Throat and Urological Sections.* The Committee recommends that such official recognition be granted the Eye, Ear, Nose and Throat Section and that any necessary details in connection therewith be referred to the Council. V. G. Vecki moved to amend by including the Urological Section. Amendment accepted.

(12). *Pacific Coast Oto-Ophthalmological Society, Joint Session.* In the matter of the request of this Society for a joint meeting with the Medical Society of the State of California, the Committee recommends that such request be granted subject to the proviso that such meeting shall be held at the same time and place as the State Society's meeting, and that it shall be governed, in every respect, by the same rules and regulations as apply to our annual meetings.

(13). *Change of Day of Meeting.* The amendment offered to Article II, Section 1 of the By-Laws provides that the annual meeting shall convene on the third Thursday of April. Prior to 1884 or thereabouts the annual meeting occupied two days and the Society convened on the third Wednesday in April. It was found (in the absence of an executive committee) that two days were insufficient for the transaction of business and a third day was added. At that time, all the meetings being held in San Francisco, it was customary to have a banquet on the evening of the third day. In deference therefore to the views of members of the Society of the Catholic faith, the day for convening was changed to Tuesday, where it has since remained. As the annual banquet has, happily, ceased to exist, there is no longer a necessity for avoiding any particular day of the week. At the same time, that the membership be given the opportunity of voting upon the change, the Committee recommends that the amendment be referred to the County Societies.

(14). *Changing Time of Annual Meetings.* The resolution contemplates a change to some time, presumably in the fall, when the meeting does not conflict, by proximity, with that of the A. M. A. It is generally believed that April is the best month in which to travel within, or to see California. Further it is a time of year when medical men in general, are glad to take a short rest after the winter season and teachers at educational centers, can get away. Lastly the annual attendance at meetings of the A. M. A. from this state, cannot be regarded as seriously affecting our annual meetings. The Committee therefore recommends that no change be made.

(16). *State Psychopathic Association.* The Committee recommends the appointment of a special committee of five to formulate a plan for the formation of such State Association and to report at the next annual meeting.

(17). *Prevention of Ophthalmia Neonatorum.* The Committee recommends that this communication be referred to the Committee on Public Policy and Legislation for action.

(18). *Changes in Medical Law.* (a) Annual tax of two dollars on all physicians for prosecution of illegals: Recommends that it be referred to the Committee on Public Policy and Legislation for consideration, that Committee to report to the Council as soon as possible.

(b) *Higher Preliminary Education.* The Committee heartily agrees with the principles herein outlined, but is opposed to the practice of the amendment as tending to practically destroy the present medical law.

The following *substitute* was introduced by Geo. H. Kress:

That this matter be referred to the Committee on Public Policy and Legislation for consideration and by that Committee to be referred to the Council of the State Society for such forther consideration and action as seems best.

The question was discussed by Vecki, Hare, Pottenger, Lobingier, Hunkin, Barlow and Kress. A vote being taken, the President declared the substitute introduced by Kress to be carried.

(c) *Division of Fees.* (Substitute accepted.) Recommend that the Secretary be instructed to send a copy of these resolutions to every county unit in the state with the request that these resolutions be given earnest consideration by each such unit.

(d) *Contract Practice.* (Substitute accepted.) Recommends that these resolutions be sent to all county medical societies with the request that they be given earnest consideration.

(e) *Expert Medical Testimony.* (Substitute accepted.) Recommended that the resolutions be

adopted by the House of Delegates as the sense of the Medical Society of the State of California in session in 1912.

(19). *Consultation by Members of the State Society Resident in Adjacent Counties or Elsewhere with Members of the Profession that have been Dropped from their County Unit.* The Committee, while recognizing the justice of the proposition believes it will be difficult to enforce its provisions. The Committee recommends that the question be referred to the Council for further consideration and with instructions, if possible, to give it effect.

(20). *Changing the County Registrars from County Recorders to County Health Officers.* The Committee recommends that the Society at this time go on record as favoring an improvement in the present method of recording our vital statistics.

(21). *Non Practising Members.* The Committee recognizes that this is an exceedingly difficult question and recommends that it be referred to the Council for action.

(22). *President of Society as active Member of Council.* The framers of constitution seem, as a rule, to have separated the executive from the legislative branches of the government. The constitution of this Society follows the general rule. The President is ex officio, a member of all Committees and is present as he sees fit, but does not vote. The Secretary is present at every Council meeting but is not a member of that body. Past experience has shown no occasion on which a different rule would have benefited the Society. The Committee recommends that the resolutions be not adopted.

(Signed) JAMES H. PARKINSON,
Chairman.
F. R. BURNHAM.
RENÉ BINE.

Each section having been adopted as read, or as amended, or as substituted, as herein above printed, it was then moved, seconded and carried that the report be adopted as a whole.

Thanks to Committee. It was moved, seconded and carried that the House of Delegates express its thanks for the earnest and arduous work of the Committee.

The newly elected President, O. D. Hamlin, was then escorted to the room and presented to the House.

Thanks to the President. J. Maher moved that a vote of thanks be extended to the outgoing President for the splendid manner in which he had conducted the affairs of the Society for the year and for the excellent and satisfactory way in which he had presided at the present session of the Society. The motion was put by the Secretary and unanimously adopted.

The minutes of the Second Session of the House of Delegates were then read and approved as read (and as above published).

There being no further business, the House of Delegates adjourned sine die.

PHILIP MILLS JONES, Secretary.

ADDRESS OF THE PRESIDENT.*

THE MEDICAL EDUCATION PROBLEM.

By THOMAS W. HUNTINGTON, M. D., San Francisco.

It is hardly to be expected that anything original can be advanced bearing upon the general subject of medical education. The work of the Council of Medical Education of the American Medical Association, seconded by the efforts of President Pritchett, Abraham Flexner, Arthur Dean Bevan, and many others, has exhausted the subject from the standpoint of modern ideals. General policies have been finally determined and it remains only to call attention to some of the perplexing details which confront all teachers associated with university medical departments.

In that delightful volume of letters, entitled "The Corner of Harley Street," Dr. Peter Harding, writing to a prospective medical student, says: "The eyes of humanity are turning slowly but very surey to *the man who knows,*" and asks significantly, *"Are you prepared to know?"*

This query forcefully interprets the spirit which animates present day teaching, and suggests a grave pedagogic responsibility; that of attracting to medicine a sufficient number of students, who, in point of time and energy and money, are willing to *meet the cost of knowing.*

Disclaiming any feeling of complacency regarding the present status of medical achievement and with hopeful prophecy for the future, it is to be said that the long series of deplorable failures and fateful tragedies which beset and belittle medical experience in the past, were logically inevitable, until the advent of Dr. Harding's "Man Who Knows."

In the past two decades, changes in medical educational policies have been kaleidoscopic. In this field of human endeavor, there has been a complete reversal of form and we have come to realize that advance has been revolutionary rather than evolutionary. The few universities which, as pioneers, have developed medicine on the newer and higher plane, and have exemplified the academic idea, have attained results brilliant beyond expectation. This achievement has been made possible, only by generous financial support. The cost to the institution has risen rapidly, until, at the present time, it is variously placed at from five hundred to one thousand dollars per annum for the individual student. Tuition fees are a negligible quantity, and it is manifest that accredited, efficient medical teaching is possible only when it participates liberally in the resources of institutions which enjoy governmental support or which attract large private benefactions. In a word, we are close upon a time, when, under the law of the survival of the fittest, the weaker schools will be forced to abandon the field, while those of repute will find it necessary to seek a secondary or post-graduate relation to the university. Schools of the poorer type and with meagre facilities will, undoubtedly, continue for a time, but there seems only one ultimate solution for their problem.

On the other hand, institutions which assume the

* Read at the forty-second annual meeting of the State Society, Del Monte, April, 1912.

responsibility of medical education, must be held to a strict accounting. There must be no turning aside to avoid obstacles; no broken faith in meeting obligations. "A university with educational patriotism," says Dr. Pritchett, "will not take up this work unless it can do its duty by it. In return for university support it will demand of its medical school a fulfillment of university ideals and give it university support or discontinue its effort to do what it can only do badly."

The sooner the profession and the general public realize that there must be a reduction in the number of schools, and a corresponding improvement in their efficiency, the sooner will a rational basis be established. In support of this idea, the profession of the country, individually, and through its organizations, has a distinct duty to perform. Every worthy physician, realizing the blighting, withering influence of unpreparedness, should without hesitation, and in no uncertain terms, warn those who are looking to a medical career that cultural training of the university type is both essential and mandatory, and that matriculation upon the basis of a high-school diploma or that elastic, misleading alternative, "an equivalent," is no longer tolerable.

There was a double purpose in prescribing two or more years of university work as a prerequisite for matriculation:

First: The world is coming to understand that liberal education, as related to vocational work, is not a fetish, and that symmetrical mental development is possible only in association with cultural study. Thereby, the student acquires the art of classification of knowledge and the ability to think logically, and he begins his professional work with clearer vision and maturer judgment. The best achievement of the undergraduate is a broad scholarship which conforms to true intellectual ideals and gives promise of a generation of medical men who will maintain a far higher average in point of efficiency and manhood than their predecessors. The great need of the present day is for men with a big background and large measure of reserve force; and it is to be said that achievement, physical or intellectual, which is worth while comes not to the man who is continually working up to the limit of his capacity and endurance, and who is struggling continually against the handicap of undertraining.

Secondly: The curriculum prescribed for the pre-medical course, while cultural in its general trend, may and should be highly specialized and intelligently co-ordinated. A fairly adequate knowledge of French, German, chemistry, physics, and biology is essential in every stage of progress; without it, the student will, very soon, discover the utter hopelessness of his efforts to keep in the race.

Much sympathy has been expressed for the "poor boy" who aspires to a medical career. It has been urged that the exactions of university schools present an insuperable barrier to the man of limited means, and that medicine will ultimately become a rich man's profession. President Pritchett unhesitatingly declares that the plea for cheaper schools for the "poor boy" is nothing less than a specious plea for the poor school, and it may be added, that the history and traditions which spring from educational policies in America are a sufficient guarantee that the poor boy is entitled to and must enjoy an equal measure of privilege and opportunity to that of his more fortunte brother.

The financial problem of the university is a veritable nemesis, and it is no secret that our own state university is perplexed, beyond measure, in an effort at its solution.

For several years, she has made liberal appropriation for the first two years. A deficit in the conduct of the University Hospital, amounting to ten or twelve thousand dollars a year, has also been cheerfully met.

But despite this fact, the Board of Regents is awake to the seriousness of an impending crisis. In order to hold the students of the first two years and provide adequately for clinical training in the third and fourth years, there must be acquired, at an early date, an academic hospital of modern type and full equipment. Upon her ability to meet promptly this vital need and upon her willingness to live up to a high standard of academic patriotism, depends largely the future status of the university in the realm of medical education.

The people of California should be awake to three facts:

First: That the human family is the most valuable asset and its conservation the most important function of the state.

Second: That the cost of education, in general, must be accounted as a financial investment, and not charged off as a financial loss.

Third: That the best way for the state to secure the benefit of scientific medicine is to pay for it, and pay liberally.

Communities are clearly within their rights in demanding, for medicine, the same measure of encouragement and support as is enjoyed by the departments of agriculture, animal industry, mining, and engineering.

The initial outlay, from the achitectural standpoint, runs into magnificent figures. A science building, to meet the needs of the first two years, will entail an expenditure of one hundred to one hundred and fifty thousand dollars. To this, there must be added twenty-five thousand dollars for equipment.

The one great necessity of the clinical years is a modern "Class A," fireproof hospital. Admitting that such hospital is to be built in units with provision for future growth, the first investment will not fall short of three hundred fifty thousand dollars, with an added fifty thousand dollars for equipment. This would provide for one hundred beds, and the necessary clinical laboratories, and a comfortable home for training school nurses. President Brookings of Washington University of St. Louis, is of the opinion that an

expenditure of five thousand dollars per bed is the requirement for an up-to-date academic hospital.

It is perfectly clear that a liberal budget must be provided for the operation of both departments. The amount required for hospital maintenance will depend entirely upon the number of free beds maintained, the number of patients who pay for maintenance, and the scale of charges for private patients.

It is the expectation of all teaching hospitals that a fairly large number of free beds will be maintained by private benefaction and endowment. It is also desirable that a considerable number of patients will be able to meet their actual per diem cost to the institution. Experience has shown, conclusively, that patients of this type, the self-respecting poor, afford far better material for teaching purposes than the distinctively pauper class. In this way, the financial problem will be easy of solution, and the deficit insignificant.

While the university hospital will always be the rallying point, the great center of activities of the medical school, it is equally true that the wards and clinics of municipal hospitals, with their large volume and infinite variety of material, should be utilized to the greatest possible extent.

Arthur Dean Bevan rightly says: "It would be best for all concerned if our great municipal hospitals could be conducted as scientific institutions, presided over by teachers and investigators of strong medical schools. Municipal authorities should learn that the hospital will best serve the interests of its patients and the community, if, at the same time, it fulfill its function as a center of teaching and research."

The technic of medical teaching, from matriculation to graduation and completion of an internship, contemplates overlapping and perfect correlation of laboratory experience. The hospital wards, the surgical and medical operating rooms, are to be regarded as integral parts of the general laboratory system, and teachers in all departments, in the future, will be required to qualify as laboratory experts of a high order. The day is fast closing when selfish interest, educational enthusiasm or altruism of a high order will be accredited as teaching qualifications.

The most hopeful tendency of modern times is that the teaching function, or at least its direction, is to be exercised and inspired by specialists in the science of pedagogy, men who possess peculiar fitness for organization and leadership, and what is more important, who have in large degree the power of initiative in the field of investigation and research. In a word, the head of a department, upon whom is to rest the greater pedagogic responsibility, must represent something more than the successful practitioner capable of attracting and holding a large private clientele.

It will be necessary for such teachers to devote many hours continuously and daily to classroom, laboratory and ward work, and it is a matter of common experience that, whatever be the minimum time exaction, many teachers, of their own volition, place no limit upon their hours of service. This means large personal sacrifice, for it is obvious that men capable of such service could easily, in private life, earn far more liberal incomes than can be covered by any institutional scale of compensation.

From the standpoint of the pure science teacher, the prevalence of inadequate facilities, on the one hand, and low salaries, on the other, offer poor encouragement for men of the right type to engage in this work as a career. Already the demand is greater than the supply, and there may be a danger, as Barker says, that "the cradle of science nurseries will be robbed, and that arrest of development, due to neglect, will follow. It can only be hoped that, under the stimulus of larger inducements, the field will, in time, prove more and more attractive."

The relation of the clinical teacher to his institutional obligations seems not to be definitely settled. The main differences of opinion are upon the following questions:

Shall the heads of departments be paid a salary, and be required to devote their entire time to teaching, ward work and investigation, or shall they be paid less and be allowed to conduct a private practice, with or without an outside office?

It is probable that either plan, under proper restrictions, will prove satisfactory, always with the understanding that the first obligation is to the school and that private interest must not conflict with official duty.

The question of income is somewhat simplified by allowing the teacher to conduct a limited number of pay cases in private rooms of the hospital, thereby enabling him to increase his income substantially. It is only fair to the wealthy class that they be allowed to share the services of men, who, through long training and much hospital experience, have become conspicuous for their skill and wisdom.

Hewlett is of the opinion that teachers who do a reasonable amount of consulting practice exert a better and far wider influence upon communities, and that the adoption of a system whereby the professor can do no private work would force the promotion of many green men, and so lower the standard of a professorship.

It is not within the power of any individual teacher to follow out and attend to the infinite variety of details which are the never-ending routine of daily experience; and the perfected system of to-day contemplates re-enforcement of the staff by a liberal allotment of highly trained assistants. In the selection of his aids, each professor will find opportunity for the exercise of his very best discretionary and executive faculty. The responsibility of special investigation ought not be entrusted to the senior student or an interne. While the novitiate should be assigned the task of following material from the bedside and operating room, he should be under the constant guidance of a master whose function it is to supervise and direct the investigation at every stage, and to pass upon the validity of findings. Close daily contact and companionship with one who works with precision, who speaks with authority, and

who is imbued with the true scientific spirit is an inspiration, and constitutes one of the fine privileges of student life.

In closing, a word is to be said in behalf of that very necessary adjunct to the teaching staff, the hospital interne, his function and his equities.

It seems probable that, in the near future, a year's interneship, prior to graduation, will be made compulsory. Under such a regime, the status of the fifth year student will need to be clearly defined. His position is one of dignity and trust and his jurisdiction, though limited, should be fully acknowledged. He certainly must not be expected to play the role of orderly or drudge. In every department of hospital conduct, the interne is indispensable and his duties most exacting, and if properly directed, will find his time of greater value to the institution than in transcribing of histories and notes. The original records he must prepare, but I sincerely hope to see the time when every hospital will maintain a bureau of records, presided over by an expert clinical accountant.

Institutions can well afford to make a fairly liberal appropriation for the care and comfort of their internes; adequate quarters, good food, and facilities for physical exercise and recreation will yield a splendid return on the investment.

At this point, those interested in medicine, as teachers or students, should be admonished regarding a sentiment which is of exceeding import and finds expression in the command, BE YE HUMANE.

With propriety, these words which suggest the spirit and the substance of the humanities, might be written upon the portals of every school and every hospital. There is a possible danger lest, in the flush of scientific achievement, with over-confidence of power and false pride of jurisdiction, we forget that the patient is of the common brotherhood.

"There is a lesson in every patient," says Osler, "aside from the malady from which he suffers." It is equally true that this lesson finds best expression in the exercise of human sympathy.

Let us not confuse the function of the schoolman and the doctor. Before his class and in the laboratory, the first is both student and oracle; at the bedside, he is a benefactor and friend.

The general scheme of which the foregoing is little more than a syllabus, has been developed to the end that human endeavor may be more fruitful, and that human life may be sweeter for the server and the served.

REPORT OF THE SECRETARY AND EDITOR.

To the House of Delegates of the Medical Society of the State of California.

Gentlemen:

The By-Laws require the Council to report to you the financial condition of the Society and the data in relation to our publications, and for that reason these topics are not mentioned in this report.

Membership. During the year 1911 twenty-four members died and twenty resigned; the resignations were in nearly every case caused by removal from the state. One member was suspended. The total membership on December 31st, 1910, was 2,087; on December 31st, 1911, it was 2,118, or an increase of 31 in spite of the loss of 44 by death and resignation. The American Medical Association requires that the exact membership on the first day of April be reported every third year, for the purpose of reapportionment of the House of Delegates of the A. M. A. The number of members reported for 1906, 1909 and 1912 are as follows: 1,783; 1,861; 2,030. It is seen from these figures that the Society is slowly growing though the rate of growth is not as high as it should be. Most of the future increase in membership will have to come from the larger centers of population, as most of the smaller counties now have enrolled nearly every eligible practitioner. Furthermore, quality is to be considered as well as quantity and as the activities of the Society are very important it is well that all applications for membership should be carefully scrutinized.

The medical defense work of the Society is of great importance and it is absolutely essential that county societies keep their records and collect their dues in a proper businesslike manner. It is recommended that Section 13 of Article VIII of the By-Laws be amended so as to make the date of delinquency March 1st instead of April 1st, and further amended by adding the words: "Any physician who has been a member in the previous year and who has not been reported as a member in good standing for the current year on or before March 1st, shall be dropped from the roll of members and shall receive none of the benefits of membership from March 1st until such time as he shall again be reported in good standing." This amendment, if passed, will deprive such delinquent members of the benefits of our medical defense during the period of their delinquency.

The volume of work passing through the office of the Secretary is steadily increasing, due in no small measure to our increased work in providing information in regard to locations, changes of address, etc.

In regard to our publications, the report of the Council will deal in detail; the editor can only say that the year was passed with rather less than the usual number of complications in spite of the increased size of the JOURNAL. To the Publication Committee, to the Advertising Committee and to all those who have given assistance, he wishes to extend his thanks.

Respectfully submitted,

PHILIP MILLS JONES, Secretary.

REPORT OF THE COUNCIL.

To the House of Delegates:

Gentlemen:—Your Council takes pleasure in presenting to you the following report of the work done by the Society for the year 1911.

JOURNAL. The JOURNAL was increased in size 16 pages and published more original articles in

1911 than in any previous year. This increase in size, together with other minor improvements such as more illustrations, increased the cost of publication by the sum of $897.42 over the previous year. But the advertising and subscription receipts increased to the extent of $1,134.48, showing a net gain, in spite of increased cost, of $237.06. As you will see from the figures in your hands, the advertising receipts from the JOURNAL amounted to $5,598.99, being the largest of any year since the JOURNAL began publication. Indeed, this is nearly two thousand dollars more than was received before the rigid rules of the Council on Pharmacy and Chemistry were adopted and applied to our advertising pages, thus excluding a considerable amount of business. The subscription list of the JOURNAL is steadily growing and the postoffice order separating dues from subscriptions has in no way interfered with this growth. No small share of the credit for our increased advertising returns is due to the energetic work of Dr. R. E. Bering, Chairman of the Advertising Committee. You will note that the JOURNAL is making a profit to the Society of approximately $4,800.

Register. The Register and Directory we do not look upon as a prospective field for any considerable monetary return; indeed, if it shall continue to pay for itself we feel that we should be quite content. It is an expensive work to publish and while the expense might be somewhat reduced by using cheaper paper and binding, we feel that it would not be wise to do so; the book is subjected to considerable use and a good quality of paper is required to stand this wear. The Register for 1911 cost $1,121.58 and the receipts from advertising were $1,232; there was therefore a profit of $110.42, which profit was increased by $107.25 from sales of the book. The demand seems to be increasing and doubtless more copies will be sold next year.

Medical Defense. Our medical defense plan has been found to work out most admirably. A very large number of threatened suits have never been brought, probably due to the fact that such threats were promptly turned over to our attorneys who notified the complaining parties that any suit brought would be fully defended. Three suits have actually come to trial and we have won in each case. In the northern part of the state there are two suits pending which will probably come to trial during the present year; one of these, however, may possibly be dropped. In the southern part of the state there are eight suits pending, but of these it is probable that only three or four will actually come to trial. As this work is of the greatest importance and as a member is only entitled to this protection while he remains in good standing, dues fully paid up, it should be urged upon all county societies that they adopt strict business principles in the matter of payment of dues. All dues should be paid in January for the current year in advance; the proper assessment should be sent to the Secretary of the State Society on or before February 1st of each year and the name of any member not reported and paid for by the 1st of March should be automatically dropped from the roll of the State Society. This gives a latitude of nearly two months in which to pay in the dues for the current year and that, we feel, is a liberal allowance of time.

Appeal to the Council. Dr. J. H. Hurst, of Santa Barbara, appealed to the Council against the action of the Santa Barbara County Medical Society in suspending him from membership for the period of five years. The case was referred to the Councilor for that district, as required by the By-Laws, and was subsequently considered by the Council at a meeting called for that purpose. As all the requirements of the Constitution and By-Laws seemed to have been complied with, and as Dr. Hurst had been given an opportunity to appear and present his case before any action had been taken, and as the spirit of the By-Laws of the State Society is to permit every county unit to have the fullest control of those within its membership, the Council declined to interfere with the action of the Santa Barbara County Society. Later, Dr. Hurst submitted some correspondence, copies of which were duly mailed to all members of the Council, who having considered the same, decided that the evidence did not justify the reopening of the case.

Financial Condition. We take particular pleasure in calling your careful attention to the financial condition of the Society. The statement which has been handed you is a copy of the report of the auditors who examined all the books and accounts for the year 1911. You will note that there was an excess of receipts over disbursements of $1,477.90; the amount of the same item for the previous year was $228.14. You will note that the year closed with cash on hand amounting to $2,029.87; the same item for the previous year was $561.97. At the close of the year there were no liabilities and the assets, after allowing for depreciation and for probably bad accounts, amounted to $3,476.56.

The present year promises to show a substantial and healthy growth. Advertising in the JOURNAL is increasing; subscriptions are increasing in number; collections are more prompt. The reports and remittances from county units have come in earlier and in better shape than ever before and nearly all delinquents have, in most cases, paid up promptly when notified from the State Society office that they were not in good standing and hence were not entitled to any of the benefits of membership, including medical defense.

The cash balance in bank on March 31st, 1912, as reported by the Treasurer, the Union Trust Co., of San Francisco, was $6,421.91 and the Treasurer has agreed to allow us 2 per cent. on daily balances from April 1st.

We feel that the Society is in a condition of sound, healthy development and we recommend that the same assessment as last year be continued and the same subscription price to the JOURNAL, $3.00 and $1.00 respectively. We are strongly of the opinion that our object should be to ac-

cumulate a reserve fund sufficiently large so that from its income most of the expenses of our medical defense work can be paid and thus allow the entire income of the Society to be devoted to scientific work, improving the JOURNAL, and generally fostering the interests of the medical profession of this state. C. G. KENYON, Chairman.

AUDITOR'S REPORT.

San Francisco, Cal., Jan. 17, 1912.

Medical Society of the State of California,
San Francisco, California.

Gentlemen:

We beg to report that we have examined the books and accounts of the Medical Society of the State of California for the year ended Demember 31st, 1911.

The following is a statement of the Receipts and Disbursements for that period:

RECEIPTS.

County Societies	$ 6,353.00
Subscriptions to JOURNAL	2,479.90
Sales of Register	80.25
Advertisements in JOURNAL	5,598.99
Advertisements in 1911 Register	777.00
Advertisements in 1910 Register	203.65
Rent received	180.00
Binders	4.20
Miscellaneous	42.04
	$15,719.03

DISBURSEMENTS.

JOURNAL Expenses	$ 4,147.86
Register Expenses	1,121.58
Society Expenses	875.15
Society Expenses	1,514.50
Salaries	5,780.00
Office Expense	650.54
Organization	35.50
Loan repaid	103.00
Miscellaneous	13.00
	$14,241.13
Excess of receipts over disbursements	$1,477.90
	$15,719.03

The financial position of the Society at December 31st last was as follows:

ASSETS.

Cash in Bank		$1,829.87
Petty Cash		200.00
Due from Adv'tsrs, JOURNAL	$241.69	
Due from Adv'tsrs, Register	455.00	696.69
Furniture and Fixtures		750.00
		$3,476.56

(NO LIABILITIES.)

The Bank balance, amounting to $1,829.87, has been verified by direct enquiry at the Bank, after allowing for unpresented checks.

We are, Gentlemen,

Yours very truly,

McLAREN, GOODE & Co.,
Certified Public Accountants.

REPORT OF THE COMMITTEE APPOINTED TO STUDY THE EFFECT OF ATHLETICS UPON THE PUPILS IN OUR SCHOOLS AND COLLEGES.

It was the desire of your committee to study this important question not only from the standpoint of theory but from practical observation, believing that concrete observations would furnish a better foundation for opinion than ideas based upon theoretical considerations alone. We have some material at hand but not sufficient accurate data upon which to base a report.

We believe that athletics are an essential part of the child's life and that the right kind of games and contests should be encouraged. We believe also that athletic contests as carried on to-day are attended with certain abuses and dangers which can be eliminated without robbing the sports of their attraction.

Athletic sports as carried on to-day are failing to fulfill their most important purpose. They are being used for the purpose of overdeveloping the strong and vigorous, where they should be adapted to the building up of the physical strength of all, the weak as well as the strong. Athletics cannot fulfill its place in the school and college until it is adapted to all, until it ceases to be for the over-training of the few and becomes a means of building up the best possible physical constitution of each pupil.

Recognizing the important observation and experiments which are being carried on by Dr. Kilgore of the State University in the study of this important line we recommend that the sum of Two Hundred Dollars from the fund of the State Society be voted to him to be used in the furtherance of this work.

The committee asks further time in which to complete its work.

(Signed) F. M. Pottenger, H. D'A. Power, Philip Chancellor, R. L. Wilbur and Geo. F. Reinhardt.

REPORT OF THE COMMITTEE ON CANCER.*

Your Committee on Cancer was empowered by you to prepare a brochure of about one thousand words dealing with the cancer question in a general way, subject to the approval of the Publication Committee and if so approved, one hundred thousand copies were to be printed for public distribution through the members of this society.

Several articles have been written by the committee in an attempt to bring the seriousness of the cancer problem before the lay mind in a dignified and enlightening way, and by the use of text incapable of distortion by the enemies of medical science. This has been found to be a difficult task and none of the attempts made by the Committee have satisfied its members or the members of the Publication Committee. It is extremely difficult to give the public straight facts without presenting opportunity for the misuse of statements by the cancer sharks and others.

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

Furthermore, the therapeutic side of the whole cancer question is in a state of ferment and it seems extremely probable that the very near future will develop therapeutic means for the treatment of the malady other than surgical.

Consultation among the members of the Cancer Committee, as well as with the members of the Publication Committee and other of our members, brings the committee before you with the opinion that the time is not quite ripe for presenting the cancer problem to the general public in the form of a published statement. We advise, therefore, that the Cancer Committee be, for the present, discharged.

EMMETT RIXFORD.
D'ARCY POWER.
W. FRANCIS B. WAKEFIELD.

MEMBERS AND GUESTS REGISTERED AT THE FORTY-SECOND ANNUAL MEETING OF THE MEDICAL SOCIETY, STATE OF CALIFORNIA, DEL MONTE, CAL., APRIL, 1912.

Adams, Lemuel P.; Aiken, G. H.

Ballance, H. N.; Barbart, J. H.; Barlow, W. J.; Ballance, H. N.; Barbat, J. H.; Barlow, W. J.; René; Birtch, F. W.; Blake, W. F.; Boalt, G. D.; Boardman, W. W.; Bowles, F. H.; Brem, Walter; Briggs, L. H.; Briggs, W. E.; Brophy, T. W.; Brown, Douglas; Browning, C. C.; Browning, F. W.; Bryson, Ch. W.; Brunn, H.; Bullock, N. H.; Bunnell, S.; Burkelman, Arnold; Burnham, F. R.; Buteau, S. H.

Carpenter, F. B.; Castle, H. E.; Cheney, W. F.; Chidester, W. C.; Chipman, E.; Christiansen, H. B.; Clark, H. H.; Clark, V. G.; Clark, W. A.; Cochran, Guy; Cooper, C. M.; Cox, H. M.; Crabtree, H. T.; Crosby, D.; Crowley, D. D.; Connor, A. S.; Conrad, D. A.

Dawson, W. J. G.; Deane, Louis; Deal, D. L.; Dempsey, R. B.; de Obarrio, P.; Dillon, E. T.; Dudley, W. H.; Dunn, Robt.

Ebright, G. E.; Edwards, T. C.; Ellis, H. Bert; Ellis, Lula T.; Evans, Geo. H.; Eloesser, L.; Enos, M. M.; Ewer, Geo. N.

Feeley, M. A.; Fitzpatrick, L. B.; Fly, E. M.; Force, J. N.; Franklin, J. H.; Franklin, W. S.; French, J. R.; Freytag, F.; Friedlander, D.; Fry, P. B.; Fulton, Dudley.

Gates, M. J.; Graham, H. B.; Gillihan, A. F.; Glover, M. W.; Gould, N. B.; Grimes, W. D.; Gross, Louis; Grosse, A. B.

Hall, J. U.; Hamilton, Jo; Hare, Chas. B.; Hare, J. B.; Hamlin, O. D.; Hartzel, R. H.; Hare, Geo. H.; Hastings, Hill; Henderson, A. M.; Hill, Harold P.; Hoag, E. B.; Hoisholt, A. W.; Horn, Henry; Hulen, Vard H.; Hunkin, S. J.; Huntington, T. W. Irwin, W. H.

Jaffa, Prof.; Jones, Philip Mills; Johnson, W. S.; Jordan, P.

Kane, J. M.; Keck, W. H.; Kelly, E. E.; Kelly, A. S.; Kenyon, C. G.; Kerr, W. W.; King, John C.; King, Jos. M.; Krotoszyner, M.

Lee, Helen; Linforth, G. S.; Livingston, W. R.; Lobingier, A. S.; Lohse, J. L.; Lucas, W. T.; Lukens, Anna; Lum, Wm.

Maher, J.; Malsberg, G. E.; Manson, P.; Martin, H. R.; Maxson, H. S.; McCleave, T. C.; McClenahan, H. C.; McCoy, George W.; Miller, A. V.; Miller, Chas. H.; Miller, F. W.; Milton, J. L.; Mitchell, C. O.; Mitchell, Elsie R.; Montgomery, D. W.; Morton, A. W.; Moore, E. C.; Moore, H. S.; Moore, Ross; Moore, W. G.; Morrison, S. K. Morrow, Howard; Musser, F. R.; Mudd, J. L.

Nagel, C. S. G.; Nelson, J. E.; Nittler, A. N.; Nusbaumer, P. S.

Oldham, J. Y.; Oliver, H. R.; O'Brien, E. S.; O'Brien, J. T.; O'Neill, A. A.; O'Neill, B. J.; Ophuls, Wm.; Orbison, T. J.

Page, C. W.; Parkinson, Jas. H.; Parker, Garth; Paterson, Frank; Peers, R. A.; Peoples, S. Z.; Phillips, P. T.; Piper, H. E.; Pischel, K.; Pope, Saxton T.; Pond, C. P.; Porter, Horace; Porter, Langley; Pottenger, F. M.; Powell, B. J.; Power, H. D'Arcy; Powers, L. M.; Putnam, H. A.

Reinle, Geo. G.; Reinhardt, G. F.; Richards, C. M.; Richardson, W. W.; Rigdon, R. L.; Rixford, E.; Robertson, R. L.; Rogers, F. L.; Rooney, R. F.; Roth, L. J.; Rothganger, Geo.; Ryfkogel, H. A. L.; Russ, Raymond.

Sawyer, W. A.; Schaller, W. F.; Schmitt, L. S.; Seawell, J. W.; Shannon, J. M.; Sherk, H. H.; Sherman, H. M.; Shipman, C. G.; Sleeper, Karl R.; Simpson, Wm.; Smith, Dudley; Smith, Rea; Snow, W. F.; Stabel, F.; Stafford, A. A.; Stansbury, O.; Stephenson, C. C.; Stivers, C. G.; Stoddard, C. S.; Stover, Wm. M.; Stratton, Robt.; Strictman, W. H.; Somers, Howard.

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THE TREATMENT OF SPINAL CURVATURE.*

By JAMES T. WATKINS, M. D., San Francisco.

(Continued from Page 204—May.)

To an appreciation of the principles underlying treatment of scoliosis, some reference to its mechanics, in so far as we understand them, is essential.

*Read before the Alameda County Medical Society, September, 1911.

In 1844 Bigelow noticed that a spine bends forward and to the side in the dorsal region as does a blade of grass—when the attempt is made to bend the latter through its widest diameter. That is, it revolves on its longitudinal axis to bend through its narrowest or thinnest diameter. I have here a piece of sponge rubber cut so that it is wider from before backward than from side to side. Pins are stuck in it to represent spinous processes, while a different kind of pin is placed at right angles to them to represent transverse processes and ribs. If I attempt to bend the rubber rod forward and to the side, the body will rotate so that the first pins—that is spines—point to the concavity of the curve, while the second pins—that is the transverse processes, point backward on the convex side and forward on the concave side. This is precisely what takes place in the thoracic column during flexion and side bending. The spines point to the concavity of the curve and the ribs project backward on the convexity.

The lumbar column behaves under flexion and side bending as does a piece of sponge rubber which is wider from side to side than before backward. That is, the spinous processes look to the convexity and the transverse processes point forward on the convex side. Of course, when the lumbar spine is lordosed—that is bent backward—the process is reversed and the bodies look toward the convexity.

Spinal curvatures, from whatever cause, usually begin as the simple C-shaped type. The so-called compensatory curves which appear in the S-shaped variety are due to a combination of the involuntary effort to return to the perpendicular and of the thrusts exerted by the same forces which caused the C-shaped deviation acting upon the other and differently shaped groups of vertebral bodies.

Manifestly then, spines are subject to the laws governing flexible rods. But when a spine has long maintained a posture of flexion and side bending, a variable segment of it, located near the center of the curve, becomes rigid. At once this changes the whole mechanical aspect of the problem. For now we no longer have a flexible rod, subject to the laws governing flexible rods, but an inflexible rod which is protected from our attacks by the portions which are still flexible and which are continuous with it both above and below. Thus I have indicated, but by no means completed, the description of the complex mechanical problem involved. To elaborate it further would necessitate my making myself technical and tedious, and would not advance us further in our consideration of the treatment of spinal curvature—the object of this paper.

It is interesting to note that while we have made some degree of progress in our studies of the mechanics of spinal curvature, thus far no theory as to its causation has been advanced which can be made to account for even a large minority of the cases which come under observation. Nor can we, with any degree of certainty, prognosticate what will be the course of a given case of spinal curvature. Professor Lorenz has related his experience with three sisters. The first was sent to him at a time when she presented a mild degree of spinal curvature. Despite all he could do she went on to disfiguring and crippling deformity. By way of precaution, the second sister was brought to him before there was any evidence of distortion! but she, too, in spite of everything, went on to disfiguring and crippling deformity. The case of the third sister he undertook with a feeling akin to despair. The same preventive and corrective measures were tried; but in her case, there never appeared the least suggstion of spinal distortion. Here were three children, born and reared under as nearly as possible identical conditions and subjected to equally cautious medical supervision, but with totally dissimilar and wholly unpredictable results.

In my own experience, the little daughter of one of our most prominent merchants was brought to me with an insignificant spinal deviation of apparently postural causation and calling for "setting up exercises." To my astonishment and consternation her distortion, while remaining flexible, increased steadily and rapidly. I called her father into consultation and explained to him the situation. The mental acumen which had enabled him to accumulate his millions now made it possible for him, in this emergency, to grasp the significance of a situation for which his personal experience had not prepared him. Despite the lamentations of hordes of women folk, and, I am sorry to say, the gloomy prognostications of doctors who somehow became injected into the case, the girl was taken off her feet for eight months and placed upon a curved stretcher of the Whitman type. Here I was enabled, by placing the spine in hyper-extension, first to check the further development of distortion and later to actually reverse the direction of the dorsal and lumbar curves—thereby making the cure permanent.

For habitual or postural scoliosis, before the curvature has become fixed, beside tonics, correction of hygienic errors, sleeping out of doors, and attention to dress, little is needed except "setting up" exercises. It does not matter what system of calisthenics is employed, so long as it is systematically carried out. A vigorous massage, both before and after exercise, is of great value. It is always desirable that the exercises should be performed between two full length mirrors and that the patient's torso should be uncovered so that she can constantly observe and correct any postural errors which may tend to creep into her work.

When a segment of the scoliotic spine has become rigid, and the entire torso has undergone changes of which the distortions of the ribs may be taken as an index, the problem of treatment is more complicated. The spinal column is then a more or less distorted rod with an inflexible middle portion and two flexible ends. It is so placed in the body that it can only be grasped at its extremities, represented by the head and pelvis.

Direct thrusts exerted through the ribs are largely dissipated through the fact that the ribs attach to the spine by joints which allow considerable motion.

Finally the distorted spine is held in distortion by the strains exerted upon it by displacements of the viscera and accommodative shortening or stretching of soft parts throughout the body.

If anyone should ask a mechanic to straighten a rod similarly constructed and equally difficult of approach and subject him to the same handicaps, the man would refuse to make the attempt. But we physicians cannot exercise that prerogative. We *have* to do something. Fortunately for us, the natural tendencies of growth, if we take advantage of them, are on our side.

At this time it is an error to begin with general muscle building exercises. It has been repeatedly observed that the shortened muscles on the concave side of the spinal curve strengthen more rapidly than do their overstretched antagonists of the convexity. Special spine mobilizing exercises have a logical foundation; but even they do not meet the essential needs of the case. First and foremost, the spine has, for some reason, proved inadequate to the demands made upon it. It is stiff and distorted in the extreme of what had been a normal motion. In this respect it may be compared to a spastic flatfoot. And, like the distorted flat foot, it is useless to attempt to treat it while it is being overworked. Such a spine must, for a time at least, be put at rest. This can only be done in recumbency. It has been my custom for some years to put such children to bed upon a gas-pipe and canvas frame which has been so bent as to present curves which are the exact reverse of those of the body when recumbent upon it. That is, when lying upon the frame, the tendency is to hyperextend the dorsal spine and to flex the lumbar segment. In a way, the spine may be said to have become distorted through the application to it, in an oblique direction, of the weight of the head and body. In theory, to reverse the process ought, if persisted in, to straighten the spine. I therefore introduce an upright and crossbar into the upper end of my gaspipe frame. From this is suspended a head sling which is fitted snugly about the patient's chin and occiput. Now, in order to obtain any desired degree of traction upon the patient's spine, it is only necessary to raise the upper end of the stretcher, when the body will tend to slide toward the foot. The higher we raise it the greater will be the pull on the head. It is surprising how great an improvement will take place in spines which are subjected to this treatment.

Results may be further augmented by means of Lange's detorsion apparatus. In this, the patients lie prone upon a table. Strong adjustable uprights offer points of fixation against which the body can be drawn by means of girths which pass around it midway between. These girths draw and then maintain the body in the reverse distortion from that to which it has been accustomed. For example, if a spine is C shaped with its convexity to the left, a girth passes around the body at the apex of the C curve and pulls it over against two properly adjusted uprights located at either end of the C till the left convex spine has been transformed into a right convexity. In this posture it is held for increasing lengths of time up to an hour, twice daily.

When I have obtained all I can by traction, recumbency and posturing, I feel that it is time to begin with forcible correction. To be efficient this method must contemplate holding permanently whatever correction can be obtained at the time of the forcible interference. One must further be in position to exert, and to maintain to any desired degree, thrusts or strains which are directly opposite to those which exist in the scoliotic frame.

We saw that the scoliotic spine presents a rigid segment of variable size, fixed in the extreme of flexion and side bending, between two flexible parts; that this spine can be grasped only by the ends, can be approached only from behind, and that the efforts to influence it through thrusts exerted upon the ribs can have little effect until the normal of motion in the joints of ribs with spine has been exceeded. To meet the problem this condition presents, nothing has thus far proved so efficient as Wullstein's apparatus.

For purposes of illustration, I will assume that we have to do with the more complex form of lateral curvature, the S-shaped right dorsal convex, left lumbar convex type. Here we note first of all, an exaggeration of the normal curves of the spine. The forward curve in the thoracic region is too great, as is the backward curve in the lumbar segment.

Next we observe the lateral deviations of the spinous processes to the right in the dorsal column and to the left in the lumbar region. There is an elevation of one shoulder and asymmetry of the contours of neck and shoulders. As a consequence of the torsion in the lumbar vertebrae, the trunk is displaced on the pelvis backward and to the right. This makes the right hip (actually the right iliac bone) more prominent than the left. Also the frontal planes of thorax and pelvis, instead of being parallel, cross each other and the lateral bodily contours are asymmetrical. Finally the ribs are unduly prominent on the convex side behind, and on the opposite side in front.

The frame of Wullstein's apparatus consists of a great inverted U, twelve feet high. From the middle of the curve of this great U, depends a screw traction appliance to which is attached a head sling, while from the floor, midway between the two arms of the U, rises a steel post upon which is a separate seat for each leg. Each seat is provided with two straps. Horizontal steel, semi-circular bows stretch from one arm of the U to the other, at a variable height from the floor. They afford attachments for apparatus with which tractions or thrusts can be made. The seat may be raised or lowered by means of a screw thread.

When the patient is seated and the head sling and leg straps applied, the forced extension or distraction which we are able to exert through both

upper and lower screw tractions, enables us to correct not only the antero-posterior curves but the greater part of the lateral curves as well. The amount of force exerted is kept always before us by means of a dynamometer.

To correct the displacement to the left of the body on the pelvis, we depress the right half of the seat. As this descends, dragging the hip with it, it recedes, causing a rotation to the right of the lumbar spine. As a consequence, the pelvis comes to lie in a frontal plane, more nearly parallel to that of the thorax and the lateral contours are improved. The asymmetry of neck and shoulders may be corrected by adjustable arm tractions. The prominent ribs, both in front and behind, are pushed in by pressure pads. These pads are incorporated in the jacket.

It is a principle of orthopedic surgery that *overcorrection* is essential to the cure of a deformity. Therefore here we may not be satisfied with a simple correction or re-adjustment to the middle position any more than we would be were we dealing with the correction of a clubfoot. We must aim to overcorrect—to transform a right dorsal into a left dorsal and a left lumbar into a right lumbar convexity; a kyphosis into a lordosis and a lordosis into a kyphosis, if our result is to be permanent.

To give the body the necessary twist, I use the posterior pressure pad, as a fulcrum and the shoulder tractions attached across the chest by a strap as the arms of a lever, by means of which I twist the thorax in the opposite direction to that taken by the dorsal torsion. The untwisting of the lumbar torsion is similarly exaggerated by means of a screw thread which enables the seat to be turned as a whole about its longitudinal axis. To better control lordosis, the seat is provided with a slide controlled by a screw.

With the patient fixed in the machine and the latter adjusted in such a way as to overcorrect, in so far as this is possible, each element of his deformity, I apply my plaster of Paris from his occiput and chin to his groins. When the plaster has hardened and dried I cut out great windows over the places where the ribs had originally been depressed. In this way I utilize the respiratory act in the attempt to force the ribs back to their normal position. With each succeeding jacket I attempt to improve my patient's contours till I believe I have brought him into a position of reversed distortion. How perfectly I can do this necessarily varies with the individual case.

Finally I remove his jacket and put him again upon his frame for a while, so that by massage and resistance exercises, given first in the horizontal and later in the erect posture, his muscles can again be brought to that state of tonicity which is essential to the maintenance of proper postures.

At some other time I may ask your indulgence while I place before you a scheme of what I believe to be the kind of resistance exercises appropriate to certain stages in the treatment of spinal curvature.

HYPOPHYSIS DISEASES AND THEIR DIAGNOSIS.*

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Vesalius appears to have been the first to describe this organ, and in his "De Corporis Humani Fabrica," 1553, he calls it the *"glans pituitam encipiens,"* under the mistaken idea that this organ secreted the "pituita" or nasal mucous. It is of interest to note here that in the lampreys the pituitary tube which remains during life opens on the dorsal aspect of the head, and, though it does not secrete the nasal mucous, it functions as an external nostril.

Soemmering in 1778 described the gland more fully, and termed it "hypophysis cerebri." Phylogenetically the Tunicata are the first to possess an organ comparable to the human hypophysis in the shape of a gland which opens into the pharynx. In the fishes we find a gland derived from the stomodoeum which comes in contact with a prolongation from the brain. Mammals possess a pituitary body having two distinct parts. In the human the pituitary body or hypophysis is a small reddish gray vascular mass of an oval form measuring about half an inch in its lateral diameter, and one-quarter of an inch in its antero-posterior and supero-inferior diameters, and weighing from five to ten grains. It is confined to a recess in the floor of the skull termed the pituitary fossa, being held laterally by the dura mater which forms the inner walls of the cavernous sinuses. It is very vascular and consists of two lobes. The anterior or inferior lobe much the larger and much the more vascular, is reniform in shape and receives the posterior lobe in its hilus or concavity.

Embryologically the anterior lobe arises as an upward diverticulum of the posterior wall of the primitive pharynx about the fourth week. This pouch of Rathke as it is called becomes nipped off by the developing base of the skull, and as a rare anomaly a remnant of this tube is found transversing the sphenoid bone whilst in men in the pharynx itself a remnant of the pituitary bud develops into a functionating tissue, and according to Haberfeld exists as a pharyngeal hypophysis. The nipped off epithelial cells of Rathke's pouch soon show a differentiation into two parts, one of which gives rise to the anterior lobe, while the other invests the body and neck of the posterior lobe, and to this investing layer of cells the special name of *pars intermedia* has been applied.

Microscopically the anterior lobe has an envelope and a faintly marked internal network of fibrous tissue. In the fibrous tissue meshes columns of cells are present which in young animals line, in older animals fill the alveoli. Sometimes a drop of amorphous material is present in the center of the cell mass, an acinus effect thus being produced, and occasionally the secreted substance is so abundant that the cells are pressed toward the periphery, it imitating as it were a thyroid vesicle.

These cells have been differentiated in accordance with their staining affinities. Thus we have

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chromophile and chromophobe cells, and the former have been subdivided into those having an affinity for the acid series of dyes, acidophilic cells, and those having an affinity for the basic series of dyes, basophilic cells. Whether each variety of cell has a different function or whether the varied appearances represent merely periods of varying function activity is still a question. Large blood sinuses are present throughout the sections of the anterior lobe, and the secretion of this lobe is said to find its way into the blood sinuses lying in the neighborhood.

The *pars nervosa* is somewhat rounded and measures only about one-sixth of an inch in diameter, and is applied to the hilus of the anterior lobe. It is an outgrowth from the embryonic neural cavity which soon becomes that of the third ventricle. During fetal life it is hollow and its cavity communicates with that of the ventricle by means of the infundibulum. In the adult human the infundibulum in its lower part becomes impervious. According to Gaskel's theory the stalk represents an ancestral mouth to which the ventricles of the brain and the central canal of the cord acted as the stomach and intestines. In the cat the posterior lobe remains hollow and in communication with the third ventricle through the open stalk.

As stated previously a part of the epithelial diverticulum of Rathke gives rise to cells which lie between the anterior glandular lobe and the prolongation from the third ventricle. They come to invest the *pars nervosa* and even form an external coating for the infundibulum, and in the cat a layer of these cells extends forward from the infundibular attachment. A few of the cells may penetrate more or less into the substance of the *pars nervosa.* These specially differentiated cells have been called by Herring the *pars intermedia,* and it together with the *pars nervosa* forms the posterior lobe which is thus partly glandular in origin. The *pars nervosa* itself is seen microscopically to be composed of neuroglia fibres and of neuroglia and ependymal cells.

The zone of junction of the anterior and posterior lobes, i. e., the so-called hilus, exhibits on microscopic examination a closed cleft representing the original space of the pharyngeal diverticulum. It is lined by a single layer of cubical cells, each possessing a large nucleus, and sometimes contains in its center an amorphous material. A few vesicles with similar content are to be found in the neighborhood and occasionally in the *pars nervosa* itself. They are lined by cylindrical cells which are said to be often ciliated.

Other vesicles, recalling by their appearance thyroid vesicles, are frequently to be seen in the mid-zone of this region. They exist as elongated cavities running from above downwards parallel to the blood vessels of the body of the gland, and are lined with cubical epithelial cells which possess a large nucleus. The vesicle content may be acidophile and resemble the thyroid colloid, or basophile and finely granular, or may be of a mixed character. The content may fill completely the vesicle cavity, or it may be retracted and the cavity also contain some enfoliated epithelial cells.

Posterior to the epithelial cleft are the cells composing the *pars intermedia.* These cells are ectodermal cells less developed than those which form the secreting structure of the anterior lobe. Colloid looking material may be seen between the cells of the *pars intermedia* in most sections, and appears to pass into the adjacent *pars nervosa,* and finally, according to Herring and Cushing, into the cavity of the third ventricle, though Edinger's work on the other hand suggests that the secretion from this lobe is carried backward into the brain tissue rather than into the cavity of the ventricle. Whether or not this colloid contains iodine is still a matter of dispute.

Physiology. Oliver and Shäfer in 1895 showed that intravenous injections of watery or glycerine extracts of the pituitary gland produced a remarkable elevation of arterial pressure, commencing more slowly and lasting longer than that produced by adrenal extract. Howell demonstrated that it was the extract prepared from the posterior lobe that had this effect, and that following the injection there was a preliminary fall of pressure lasting several seconds to a minute, and then a rise of twenty to thirty minutes' duration. The accompanying slowing of the heart lasted a little longer. With repeated injections the results became less marked and sometimes failed altogether. If the vagi were cut or atropine administered, the pressure rose higher, but the slowing of the heart was less marked. Shäfer and Swale Vincent later discovered that the extract of the posterior lobe contained two substances, one hypertensive re-injections of which led to an immunity to its action, the other hypotensive repeatedly effective, but only for a brief interval at a time. The rise of blood pressure that was produced was found to be associated with a general vaso-constriction having no relation to innervation by the sympathetic system. Thus the coronary and pulmonary blood vessels are affected in common with the arterioles of the system generally. Following the preliminary constriction of the renal vessels a dilatation ensues, with the result that an increased urinary secretion is produced. On the other hand the vaso-constrictor effect produced on the thyroid gland is said to be a prolonged one.

This posterior lobe extract further causes dilatation of the pupil, directly stimulates the musculature of the bladder, uterus and intestines, and gives rise to a diminished tolerance toward carbohydrate food or to an actual glycosuria. Daily injections over long periods of time lead to progressive emaciation often with marked degenerative changes in the spleen, and central necroses in the liver. The extract is absorbed slowly if at all from the stomach, and is destroyed by pancreatic digestion.

Injection of an extract of the anterior lobe leads to no recognizable immediate effect except in states of hypopituitarism when it causes a temporary pyrexia. Feeding of young rats with this lobe, however, causes, according to Shäfer, an exaggeration of their growth.

The injection then of extracts of the two lobes shows the curious paradox that the injection of the extract from the glandular lobe gives rise to little physiological effect compared to that resulting from the injection of the extract of the *pars nervosa,* and it is the extract from the *pars nervosa* itself rather than that from the investing *pars intermedia* as Osborne and Vincent have shown that is responsible for the results obtained. In explanation of this it may be suggested that the active posterior lobe extract is really produced in the gland cells belonging to the *pars intermedia,* but is activated on its way through the *pars nervosa,* and that the extract of the anterior lobe as injected represents an unactivated secretion.

Clinically many reports have been issued which tend to show that the effects produced in physiological animal experimentation are paralleled in human pathological conditions so that in extract of the posterior lobe of the hypophysis we have a therapeutic agent which deserves conscientious trial as a diuretic, as a hypertensive drug, as a stimulator of the slack uterus, of the paretic bowel and of the toxemic heart.

Though many experimenters had previously practised hypophysectomy in animals, it remained for Paulesco of Bucharest to devise a method of surgical approach which greatly facilitated removal of the gland, and to prove that its total ablation in dogs and cats was followed uniformly by death within a short time (twenty-four hours on the average). In those animals in which death did not occur he was able to demonstrate microscopically that the removal had been incomplete. He further showed that the quickly fatal result was due to the loss of the anterior lobe, and that ablation of the posterior lobe caused no immediate harmful effect. Further section of the stalk was comparable to a complete or nearly complete hypophysectomy.

Cushing and his co-workers in this country after most thorough experimental investigation find

1. That total removal of the hypophysis in the cat and dog leads inevitably to the death of the animal, that this is not due to surgical trauma or post-operative complications, and that incomplete removals produce no immediate disturbance. However, even in adult animals death need not occur as promptly as Paulesco claimed, whereas puppies may remain in an apparently normal condition for at least three weeks before terminal phenomena appear. Then the animal becomes unsteady, there is arching of the back, low temperature, shivering, coma and death in unconsciousness.

2. That the same symptoms after the same intervals of time follow the removal of the entire anterior lobe even though the posterior lobe remains in place.

3. That separation of the hypophyseal stalk owing to circulatory disturbances is comparable either to a partial hypophysectomy or to a total removal with immediate re-implantation of the excised tissue elsewhere in the body. The gland becomes reattached, but the pathway for the posterior lobe secretion may become obstructed by the scar leading to an accumulation of hyaline within the channels of the *pars nervosa.*

4. That partial removal of the anterior lobe leads in young animals to a persistence of the infantile type, and to lack of development of the secondary sexual characters, in older animals to adiposity and atrophy of the genitals.

5. The removal of the posterior lobe or permanent damaging of its function leads to a marked increase of tolerance toward carbohydrate food, there occurring at the same time a tendency to subnormal temperature, and to the acquisition of fat. Whether or not the convulsions and excessive sexual activity which have been seen in a few cases can be ascribed to the removal of this lobe is considered questionable.

Since the publication of Cushing's work Handelsmann and Sir Victor Horsley have issued a preliminary note recounting experiments upon cats, dogs and monkeys which seem to show that complete removal of the gland in the monkey at least is not incompatible with an indefinite continuation not only of life but also of good health.

They further state in contradistinction to Cushing that three of their dogs survived in health after complete removal of the anterior lobe. It may be that the results obtained in cats and dogs do not apply to men and monkeys, and that the presence of a functionating pharyngeal hypophysis may explain the discordant results reported with dogs.

Contemporarily Morawski reported that monkeys after permanent severance of the pituitary stalk survived indefinitely and exhibited no symptoms. He suggests that it is the opening of the third ventricle in the operation as performed on cats and dogs that leads to the lethal issue, but in view of the care evidenced in the reports of Cushing's work it seems much more probable that the anterior lobe of the gland in monkeys is not vitally dependent for its blood supply upon vessels which are cut through at the same time that section of the stalk is made. These reports, however, serve to bid us hesitate before we apply in their entirety to man the results obtained in experimentation upon cats and dogs.

Starling has suggested that the activities of the various parts of the primitive organism were coordinated by means of chemical products derived from glandular structures. These chemical products he termed hormones. In course of development the nervous system superseded the glandular structures as the chief coordinator, though still in the mammalian body both methods are employed. Not only are the internal secretions of many of these glands of direct vital importance, but the activities of one gland seem to be stimulated, checked or otherwise moderated by the secretion of some other gland, so that malfunction of one gland may not only produce a direct effect, but may throw out of gear the activities of a second gland which in its turn reacts perhaps on the first gland or upsets the functions of a third gland, and so on *ad infinitum.*

Experimentation and observation have shown that in castrated animals, e. g., in horses and cattle as in eunuchs the hypophysis is increased in size and weight. A similar perhaps characteristic change develops during pregnancy, and it has been suggested that the thickening of the facial tissues that

occurs during the pregnant state is dependent upon pituitary hyperactivity, and that the hypophysis is the organ which determines the time at which the birth of the child shall occur. After complete thyroidectomy the histological examination of the hypophysis suggests a condition of increased function. Partial hypophysectomy leads in its turn to atrophy of the testes, and to histological changes in the thyroid, in the islands of Langerhaus, and possibly in the thymus, adrenals and ovaries. Thus malfunction of one gland disturbs the interglandular equilibrium, and leads to a chain of symptoms the correct linking of which is extremely difficult.

It is evident that in diseased conditions of the hypophysis we may expect

1. Symptoms dependent upon a change in its secretion.

2. Symptoms dependent upon the new anatomical intracranial relations that arise.

1. *Symptoms dependent upon a change in its secretion.* Many years ago Woods Hutchinson epigrammatically termed the pituitary body the organ of growth, and it is not improbable that this gland directly or indirectly plays a marked role in the determination of an individual's stature, a variation of activity within the normal leading to a variation of growth within the normal, an active gland leading to a stature above, a sluggish gland to a stature below the mean.

If this be so, then if the gland activity be not confined during the period of growth within the limits of the normal we might expect correlated stature variations outside the mean range, a very active secretion leading to giantism, a very sluggish secretion leading to dwarfism, and this although the epiphyseal lines ossify at the customary periods.

We know that the secretions of other glands directly or indirectly have a similar influence; thus the capon, the steer and the eunuch present as is well known instances of an excess of growth which can be artificially induced by castration, a measure which also leads to an hypertrophied hypophysis.

On the other hand as far as we know at present the hypophysis presents no marked changes in the dwarfism that is associated with rickets, with achrondroplasia, with cretinism, or with defective renal or defective pancreatic activity.

Acromegaly. To Pierre Marie we are indebted for the first adequate description, in 1886, of, at that time, a new clinical entity, a disease characterized by an abnormal growth of the hard and soft tissues of the face, feet and hands.

The features exhibited by patients with this disease, the large spade-like hands with their padded eminences and sausage-shaped fingers, or maybe the elongated well-formed giant hands, the massive and long inverted oval-shaped face with its large nose, thick lips, accentuated supra-orbital ridges, prominent malar bones and projecting lower jaw, the enormous feet and the cervico-dorsal kyphosis are so well known to you as to merit only passing mention.

An association between this condition and a diseased hypophysis was soon noted, though for a long time it was surmised that it depended upon a suppressed function of the gland. To-day though it has been impossible to produce experimentally sufficient hyperfunction of the gland to give rise to the clinical features of the disease, yet the feeding experiments of Shäfer, the experimental work of Cushing, the post mortem examination of the gland in patients who have died whilst suffering from the disease, and above all the regression of symptoms that have so speedily followed partial removal of the diseased structure strongly suggest that acromegaly is directly associated with hypersecretion of the anterior lobe of the hypophysis.

It has been argued in confutation of this idea that acromegaly has occurred in individuals in whom at post mortem the gland was normal, but we know that anatomical size is not a correct criterion of physiological function, and it is possible that in some instances an enlarged pharyngeal hypophysis may have remained undiscovered.

According to the present views if this increased function of the anterior lobe be associated with increased posterior lobe activity, we might expect that a glycosuria or at any rate a diminished carbohydrate tolerance as tested by the ingestion of glucose or levulose, an increased blood pressure, polyuria and nutritional changes might be a part of the clinical picture, and such a combination of symptoms is presented by not a few of the patients.

The type of the disease, whether benign, lasting maybe fifty years, or chronic, lasting from eight to thirty years, or acute, lasting from three to four years, is naturally determined by the nature of the growth, which may be simply hyperplastic, frankly adenomatous or of a malignant character.

The relationship between this disease and giantism is admittedly a close one though the graphic conclusions of Brissaud and Meige that giantism is the acromegaly of youth, acromegaly the giantism of adult life, acromegalic giantism the same process beginning in youth and extending over into manhood are not universally accepted, for cases are on record in which acromegaly and giantism co-exist in young individuals. Partial giantism, a condition perhaps akin to acromegaly, may perhaps in some instances be due to pituitary malfunction.

Frohlich's Disease. *Dystrophia adiposa genitalis. Hypophyseal infantilism. Hypophyseal eunuchism.*

(By infantilism we mean the failure of the primary and secondary sexual characteristics to appear at their proper time, and this whether the general body growth be diminutive, normal or gigantic.)

To Fröhlich of Frankl Hochwart's clinic as to Marie we are indebted for the first adequate description of a symptom complex which may accompany some forms of hypophyseal disease. The syndrome consists of

1. An atrophy and decreased function of the organs of generation as evidenced by amenorrhea, failure of sexual desire and potency, and a deficiency of the head, chin, axillary and pubic hair.

2. Associated with these changes in the organs of generation is an excessive deposit of fat in the subcutaneous tissues of the trunk, of the genitals and within the abdomen. Accompanying this gen-

eral adiposity may be a dryness of the skin, a brittleness of hairs and nails similar to that occurring in myxedaema. Marked drowsiness is a common accompaniment.

If this disease begins before puberty, dwarfism and infantilism occur. In many cases the atrophic genitals may exhibit malformations such as hypospadias, kryptorchism, etc. In other instances feminine sexual characteristics may develop in males, and masculine sexual characteristics in females. Thus the male may exhibit abnormal mammary development, or a feminine type of pelvis, the female a masculine voice and an excessive growth of body hair.

In those patients in whom the disease develops later in life, adiposity, falling out of the hair, amenorrhea, loss of sexual desire and of sexual potency occur.

Not infrequently in this dystrophy the anomalies of the genital organs precede the adiposity, though cases are on record in which there is no reference to the occurrence of abnormalities of the functions of the organs of generation, perhaps due, as Pick suggests, either to defective observation or to failure to enquire into sexual history. On the other hand, excessive fat deposit may not occur, or at the time of death may have given place to a terminal cachexia.

The resemblance between the clinical picture as outlined and the condition depicted by Cushing as developing in animals after partial removal of the anterior lobe of the hypophysis is so striking that one is strongly tempted to ascribe this syndrome to pituitary anterior lobe hyposecretion. If the posterior lobe concomitantly exhibit diminished function we might surmise that an increased tolerance for carbohydrates, a low blood pressure and perhaps constipation and diminished urinary secretion might be found as a part of the clinical picture.

The pituitary tumor that is found in individuals so afflicted is often of a malignant nature, i. e., of such a character as to favor the probability of actual interference with pituitary function. Such a tumor may open into the sphenoidal sinuses and lead to a discharge of cerebro-spinal fluid from the nose, or may actually traverse the base of the skull and appear in the pharynx. The malignancy of these tumors is relatively low, and there is little or no tendency toward the occurrence of metastatic growths. Patients so afflicted may live for years. The question of function is rendered complex inasmuch as a number of case reports are on record in which the symptoms have been greatly mitigated by partial removal of the tumor, the improvement being perhaps due to relief from a pressure which interfered with remaining gland activity.

On the other hand not only may Frohlich's symptom complex occur with certain hypophyseal lesions, but an identical clinical picture may be presented by patients in whom at post-mortem the pituitary gland seems to be normal, the apparently causal lesion being found located outside the hypophysis, either in its neighborhood, in the third ventricle or in the posterior cranial fossa, an accompanying hydrocephalus being present. If of hyphophyseal origin the main growth may be above the level of the fossa inlet.

In view of these varied post-mortem findings it has been suggested that this dystrophy is dependent upon a lesion of the *pars nervosa* or of the gray matter in the region of the *tuber cinereum,* and it has been spoken of as a cerebral dystrophy. It is possible that through direct or indirect pressure the anterior lobe of the gland becomes inactive, or that the channels of outflow or absorption are so interfered with as to result in an inadequate quantity of anterior lobe secretion reaching the general circulation, and Cushing has suggested that the increase in weight, etc., that occurs late in some cases of intracranial growth is due to indirect interference with hypophyseal function.

This *dystrophia adiposa genitalis* presents not a few points in common with the Brissaud type of infantilism which is regarded as representing the mildest form of thyroid deficiency, and it is not improbable that mixed cases occur and that cases of one type have been wrongly catalogued as belonging to the other. The defective mentality, the absence of evidence of intracranial change, general or localized, and the big improvement manifested from thyroid administration will speak for thyroid origin in a doubtful case.

The mere determining that a patient presenting this syndrome is suffering from pituitary rather than from thyroid malfunction is not sufficient to locate the lesion within the hypophysis. If neighborhood symptoms are present, the lesion is probably within or around it. If, however, actual destruction, and not mere enlargement of the pituitary fossa, or evidences of an associated acromegaly be found, then we are justified in assuming that the lesion has definitely arisen within the gland. This is in striking contradistinction to acromegaly, the appearance of which, whether we regard it as due to a hyper or perverted secretion, definitely locates the lesion within the hypophysis.

Occasionally the infantilism that is found associated with a pituitary growth approaches the Lorain and Hastings Gilford types. In the former it will be remembered when adult age is reached the figure is small and slim and of a child's size though having the outlines of that of an adolescent whilst the organs of generation are immature. In the Hastings Gilford type there is a queer tendency to premature aging, the same dwarf-like creature presenting a curious combination of immature development and of premature old age. To what extent pituitary malfunction is responsible for these anomalies remains for future observation to determine.

Mixed Types. Not infrequently acromegalics present some of the features described as characteristic of the *dystrophia adiposa genitalis,* becoming unduly fat and impotent. It may be as Cushing suggests that the latter symptoms represent a later stage of a pure acromegalism, the nature of the tumor at first adenomatous, changing in character and becoming malignant, the hypersecretion associated with the former now being

replaced by the hyposecretion associated with the latter type of growth, a comparable change of function to that which occurs when myxedema follows exophthalmic goitre. But there are undoubted instances in which even in youth a mixed type occurs, giantism and acromegaly supposedly characteristic of an excessive gland function appearing in a patient exhibiting a rudimentary state of the organs of generation, and a complete absence of the secondary sexual characteristics.

It may be that the different cells described as occurring in the anterior lobe have different functions, one variety being associated with body growth, the other with the development of the sexual characteristics, and that both types of cells may or may not be concomitantly involved, or may or may not have their functions disturbed in like manner, or it may be even yet that both acromegaly and Frolich's disease are due to a perverted secretion of the hypophysis rather than to a mere excess or deficiency, or that the mixed type may be due to polyglandular insufficiency.

If the anterior and posterior lobes be regarded as glands having altogether separate functions, an idea which their close anatomical union hardly supports, it is evident that either a normal, excessive, diminished or perverted secretion of one lobe may be associated with either a normal, excessive, diminished or perverted secretion of the other lobe so that many possible combinations of gland malfunction may arise, and many mixed clinical pictures be produced.

Anomalous Types. The physiological action of the extract of the posterior lobe, and Cushing's work upon carbohydrate tolerance, etc., suggest that patients exhibiting glycosuria, obesity, polyuria, sexual anomalies, marked hyper or hypotension and cardio-vascular non-valvular insufficiency will need to be specially examined for evidences of pituitary involvement, and just as we have fruste types of thyroid malfunction so we will surely meet with fruste forms of hypophyseal disease.

How much the estimation of the carbohydrate tolerance and of the influence upon the changed tolerance of injections of posterior lobe secretion as outlined by Cushing will aid us diagnostically remains to be determined though the difficulties associated with the administration of the requisite amount of glucose or lactose are considerable, and the similar Strauss test employed in estimating hepatic function is, in my experience, of little value.

If it be definitely established that the posterior lobe secretion finds its way into the third ventricle then the examination of the patient's cerebro-spinal fluid may yield serviceable information.

Acute Pituitary Insufficiency. Whether true or relative pituitary insufficiency may arise during the course of fevers and toxemias as suggested by French writers is questionable. The apparent improvement of such patients after the use of the extract is, of course, very inconclusive evidence.

The Polyglandular Syndrome. How malfunction of one gland may lead to a syndrome due to the faulty interaction of many glands has been already alluded to. Many case records have been reported, particularly by the French writers, in which such a condition has been presumed to exist. We have all seen similar cases and in our present state of knowledge the elucidation of the exact train of events is most difficult. The diagnosis in many instances has been made to depend mainly upon the results obtained from combined glandular therapy, a means of diagnosis alluring but deceiving inasmuch as the extract derived from the gland principally at fault may exist in an unactivated condition, or may be stored within the gland in quantities insufficient to supply the bodily needs. The part which malfunction of the hypophysis plays in such a syndrome remains for the future to determine. It may perhaps be wise to mention here that the use of the pituitary extracts in these seeming pluriglandular diseases is contraindicated in conditions of high blood pressure, and that adrenal and pituitary extracts should not be simultaneously administered, and extract of adrenal body or adrenalin not be given in conditions of supposed hypophyseal hyperactivity.

2. *Symptoms dependent upon the new anatomical intracranial relations that arise.*

a. Anatomically the hypophysis is an intracranial organ and consequently tumor growths increasing its bulk commonly give rise to the characteristic symptoms indicative of increased intracranial pressure; viz: headache, vomiting, optic nerve changes.

Headache is seldom absent altogether, and sometimes is of intense severity. It appears as a rule as diffuse pains in the frontal region, and may exhibit a paroxysmal migrainous character.

Vomiting is a frequent symptom occurring according to Frankl Hochwart in 75% of cases.

Vertigo is less common, and spasmodic attacks rarely occur.

Choked disc and post-neuritic atrophy occur much less frequently than primary optic atrophy (perhaps in about 25% of cases).

Quite common are psychical changes, the patient becoming depressed, melancholic and physically and mentally torpid. A remarkable symptom which may occur is intense paroxysmal drowsiness, the attack lasting from hours to days or even weeks at a time. How much this is due to perverted gland function, and how much to indirect mechanical effect is undetermined. As with other intracranial growths late distance pressure symptoms may appear.

b. Symptoms due to neighborhood pressure effects.

Pressure upon the chiasma by the pituitary growth is a frequent finding, the anterior angle of the chiasma apparently receiving the most trauma.

As a result, impairment of vision in one or both eyes is often complained of. It may vary in degree from time to time with changes in the size of the growth, and may be associated with the appearance of a blue haze over everything. Later inability to see to the right or to the left, or a feeling as though the patient were walking between two high walls, and later still almost complete blindness may be prominent symptoms.

The use of the perimeter will demonstrate in

such cases marked alterations in the visual fields of which a bitemporal hemianopsia is the most common and most characteristic. Vision tends to be lost first in the upper portion of the temporal half of one field, perhaps involving the whole temporal half of the field of this eye before leading to a similar defect in the other eye. Later the bitemporal hemianopsia is apparent. The boundary line between the blind and seeing parts is hardly ever regular or vertical, and if so it generally passes through the point of fixation, a fact which helps to distinguish chiasmal lesions from lesions of the optic tract and cortical centers in which the macular field is spared. The absence of re-entering angles of contraction is noteworthy.

As the condition progresses the entire field of vision may be lost in one eye, the other still exhibiting a temporal hemianopic defect. Finally vision may be lost in the entire fields of both eyes.

Other variations in the visual fields are concentric contraction and central scotoma, but homonymous hemianopsia has been described. In some cases the color fields are definitely hemianopic while the fields for white may be almost full.

The ophthalmoscope commonly demonstrates a condition of partial or complete primary optic atrophy (50% of cases) though as previously mentioned choked disc or post-neuritic atrophy may be present (25%). The pupil reaction may be entirely lost or the hemianopic pupil phenomenon of Wernicke be exhibited.

2. Pressure upon other nerves in the vicinity. Large growths may press upon the third and sixth nerves, leading to weakness or paralysis of the structures supplied by them. Total ophthalmoplegia may be present, occasionally nsytagmus occurs. Trigeminal lesions are exceptional, but when present may lead to neuro-paralytic keratitis. Anosmia from pressure upon the olfactory nerves is not infrequent.

3. Pressure upon the cavernous sinuses may cause uni- or bilateral exophthalmos.

The use of the X-Ray in the diagnosis of pituitary disease. From the location of the pituitary fossa and the clearness with which the shadow of its normal outline can be seen upon a satisfactory radiogram, it was early surmised that the X-Ray would be of distinct diagnostic service in diseases of this organ. Oppenheim seems to have been the first to report a case which proved beyond all doubt the great service that the X-Ray could render. Since his report many radiograms good and bad have been published in the literature or exhibited at societies, and ingenious diagnoses made to rest upon the pathological conditions they were supposed to show. But as the minute anatomy of the pituitary fossa and the physiological variations which it and its adnexa might exhibit have received but scant attention in most anatomies (a striking exception, however, being that of Poirier's) it is readily understood that even good radiograms exhibiting changes well within the normal have been classified as pathological in character. However, Busi and Balli have of late, in an admirable article of which we make free use, drawn attention to the physiological variations that the fossa may present.

The radiographic technic is briefly as follows:

1. A point upon the orbito-auditory line fifty millimeters from its anterior end is marked.

2. The head of the patient is so placed upon the plate that its sagittal plane is parallel to the sagittal plane of the plate.

3. The tube target, at a distance of fifty centimeters from the plate, is centered over the point marked.

The vertical incident ray under these conditions will pass through the center of the floor of the fossa, and distortion effects are minimal.

The fossa itself is, of course, at some distance from the X-Ray plate, a distance varying with the width of the patient's skull, consequently each turn of the head on its vertical axis, and each tilting on its transverse axis alters considerably the picture of the cavity, and so it is very important to obtain as true parallelism as possible of head and plate.

Large variations in the direction of the incident perpendicular ray will produce similar effects, and Krause frankly states that in a not inconsiderable number of cases he has assumed widening of the *sella turcica* when autopsy revealed the contrary.

Radiographically the *sella turcica* may exhibit one of the following types which are arranged in the order of their frequency:

a. The three-quarter oval type.

b. The half circle type.

c. The three-quarter circle type.

d. The rectangular type, anterior wall and lamina quadrilateral constituting the shorter side of the rectangle.

The shape of the *sella turcica* bears no relation to the shape of the cranium, and between these four types there are numerous transitional forms.

Variations in size similarly occur.

The anterior-posterior diameter of the inlet varying in men from eight to fifteen millimeters.

The anterior-posterior diameter of the cavity varying from seven to fourteen millimeters.

The oblique diameter of the cavity varying from ten to sixteen millimeters.

The vertical diameter of the cavity varying from six to eleven millimeters.

Much importance has been ascribed radiographically to the shadow of the tubercle of the sella, but in normal radiograms it may be wanting, hardly visible or project like an acute angle, variations in its appearance leading to variations in the slope of the anterior wall.

The *dorsum sellae* is usually bent forwards and concave anteriorly, but may be vertical. It measures in height ten to eleven millimeters, and at its point of implantation measures in diameter five millimeters, about its middle four millimeters, less above. Normally, at any rate in men, it never appears as a thin line, and such thinning has a marked diagnostic importance indicating atrophy and destruction. Frequently in such cases the process is unduly high owing to an accompanying erosion of the floor of the pituitary fossa. As

destruction proceeds the shadow of the lamina quadrilateral disappears.

Contrary to many reports scant importance is to be attached to the shadow of the posterior clinoid process since they may be hidden within the shadow of the quadrilateral plate, may be physiologically absent or may appear to be present when absent.

The floor of the sella is sometimes level, sometimes slightly concave, sometimes deeply hollowed. It should appear as a fine regular opaque line. With faulty projection or when markedly depressed it may exhibit a double contour.

The anterior clinoid processes may throw shadows on the same level below or above that cast by the tubercle, and their inferior margin makes different angles with the anterior fossa wall. They are extra-sellar and it is unsafe to argue that the small inclined shadows sometimes cast by them result from atrophic processes within or above the fossa.

Abnormal clinoid processes are not infrequently physiologically present. They may prevent an exact interpretation of the shape of the sella, and if a bridge of bone unite the superior extremity of the quadrilateral plate with the anterior clinoid process it may be taken by the inexperienced for the floor of the fossa, as may also the shadow cast by the middle fossa of the skull.

In some plates shadows of increased density due to elevated bony bosses on the inner skull table appear within the cavity of the fossa. They must not be mistaken for concretions.

From the above description it is evident that while extensive changes of the fossa and its adnexa are recognizable at a glance much experience is needed before deciding that minor changes are indicative of diseased processes, and it must be remembered that destructive lesions other than those arising from the pituitary gland may involve the region of the fossa and its adnexa, and that a large fossa may be found in patients suffering from extra-hypophyseal intracranial growths or from hydrocephalus.

In addition to an abnormal fossa outline the radiogram of the acromegalic skull exhibits irregularity of the cranial parietes, enlarged frontal and maxillary fossæ, an exaggerated post lambdoidal prominence, and an enlarged prognathous jaw.

Variations in the symptomatology. Though change in bulk is commonly associated with change in function yet either one may occur whilst the other remains within the limits of the normal. Various combinations of symptoms and signs thus occur, sometimes those due to pituitary malfunction, sometimes those due to increased intracranial pressure, sometimes those due to local pressure effects being most in evidence. In other cases concomitant symptoms having no relation to the coexisting pituitary tumor are complained of. The occurrence of general and local pressure symptoms alone suggests a cystic growth. Syphilis and tuberculosis may occasionally attack the gland and be associated with lesions of like nature in other organs.

Some of the patients with pituitary disease will first visit the oculist, others the gynecologist, others the internist. There is no short road to their correct diagnosis. Familiarity with the subject at hand, a routine complete method of physical examination and of laboratory investigation, the use of the perimeter and the correct interpretation of technically good radiograms, these are the essentials which will enable us to recognize lesions of the hypophysis.

NOTE.

The literature dealing with the hypophysis is quite extensive. I have purposely omitted references, but would express my indebtedness in preparing this article not only to those named in the text, but also to Delille, Thaon, Herbert Fisher, Jameson Evans, and Melchior.

REPORT ON MEDICAL EDUCATION.*

By W. F. SNOW, M. D., Sacramento.

To the President, Thomas W. Huntington.

Dear Sir:

As representative from California, I attended the series of Conferences held in Chicago February 26th-March 1st, 1912, inclusive. These conferences were as follows:

1. Conference of A. M. A. on Medical Education.
2. Conference of A. M. A. on Medical Legislation.
3. Conference of A. M. A. on Public Health.
4. Conference of State Medical Examining & Licensing Boards.
5. Annual Meeting of Association of American Medical Colleges.

All of these meetings were well planned, full of interest, and well attended.

MEDICAL EDUCATION.

The most interesting discussions during the sessions on medical education centered about the subjects of practical examinations for the licensing of medical graduates; and the relation of the medical school to a fifth or hospital year.

Mr. Frederic G. Hallett, Secretary of the Conjoint Examining Board of England, presented in detail the successful practical examinations conducted by his organization. Mr. Hallett demonstrated that the practical part of the English examinations can be given properly at the rate of two hours and ten minutes for each twenty-four applicants. In the United States at least nine states have adopted some form of practical examinations. Among these Massachusetts, Ohio, Wisconsin, Colorado, Nebraska and Utah seem to have made considerable progress in this direction. New York is considering the acceptance of one year in an accredited hospital service in lieu of a practical examination. Indiana empowers the State

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

Licensing Board to fix the standards of medical schools and considers that this insures the practical nature of the training received. Pennsylvania's new law also places medical schools under the supervision of the Bureau of Medical Education and Licensure. Michigan proposes a general staff of non-paid appointed examiners throughout the state to mark the written part of examinations (50%) and a paid staff of practical examiners to give a practical laboratory and clinical examination (50%).

It was very generally agreed that too much time is being required of the medical student. Statistics were presented to show that the majority of medical schools require 8,000 to 9,000 hours of work from the student, whereas, better results would be obtained by requiring 5,000 hours (or an average of eight hours per day of lecture, laboratory and required preparation) and giving the student an opportunity to follow up those special lines of reading or observation which appeal to him.

The claim was made in a very well organized paper on "Some Mistakes in Teaching" that 25% of the student's time is lost through duplication and lack of coordination in the curriculum. There was a general belief expressed that greater emphasis must be placed on developing the student's powers of observation, and on training him to think for himself. The importance of placing medical professorships on an academic basis was evidenced in many ways.

A standard four-year high school preliminary course, as a basis for a four-year flexible medical course, was generally agreed to be the present practical requirement to be advocated from the M. D. degree. The acceptance, for membership in the American Medical Association and in State and County Societies, of ignorant and admittedly incompetent doctors was the basis for some criticism.

A NEW MEDICAL SCHOOL FOR CALIFORNIA.

An announcement incidental to a discussion of medical education standards possesses some special interest to Californians. A medical representative of the Jesuit Order stated that in the near future that order would establish a medical college in California,—probably in San Francisco.

THE HOSPITAL OR FIFTH YEAR.

Many interesting viewpoints were expressed concerning this subject. Dean Dodson, of the Rush Medical Department, outlined one of the most interesting plans. He believes that a strong medical department can arrange with private hospitals in towns or cities within a practical radius to provide the fifth year instruction. By the judicious selection of members of the visiting staffs of these hospitals for the purpose of this fifth year instruction, and by their appointment as clinical lecturers (or under some other title), the fifth year students can be ensured adequate practical supervision and instruction without cost to the school, and the hospitals entering into the arrangements will profit by better medical service.

There were many who believed with Dean Dodson that the question of a fifth year was more a matter of policy than of administrative difficulty. Doctor Wesbrook, Dean of Minnesota Medical Department, stated that he believed 80% of the medical graduates should be given a fifth year in practical hospital interne work, but that at least 20% of the men should be encouraged to go into a fifth year of technical laboratory work. His reasons for advocating this selection of 20% of the men for training in the non-practicing branches of the medical profession, were based upon the proportionate need of the public for research workers, laboratory diagnosticians, administrative appointments in hospitals, public health work, etc.

UNIVERSITY HOSPITALS AND ACADEMIC PROFESSORSHIPS IN MEDICINE.

The university hospital as a necessary part of medical instruction equipment was actively discussed. No one, however, contested the desirability of such a hospital for research work and for the demonstration of selected and rare cases. The need for placing medical school professorships on an academic paid basis has been mentioned above. The character of much of the teaching,—clinical, laboratory, didactic—being given to-day was strongly criticized. Doctor Edward Jackson, of Denver, particularly emphasized the need for teachers who "know what their students see and can understand." Dean Christian outlined the new plan of examinations at Harvard designed to reach this point of testing the real permanent knowledge of the student. A practice of considerable importance and one which should be widely encouraged, has been established by several medical schools, i. e., furnishing a miscroscope to each student at the beginning of his course and permitting him to pay for it on the installment plan. Several state examining boards recognize this practice by requesting each candidate to bring his own microscope to the examination.

MEDICAL LEGISLATION.

During the sessions of the "National Confederation of State Medical Examining Boards" arrangements were practically completed for a union of all the important examining boards, the purpose being to encourage uniformity of examination standards, and to promote reciprocity in the recognition of licenses granted by the different states.

The methods of examining candidates in various states came in for some sharp criticism. Mr. Hallett particularly emphasized the point that each examination paper, or practical examination, should be read or attended by at least two members of the examining board. Any one listening to the discussions could not fail to appreciate the need for uniformity of examination procedure and for the development of some practical method for determining the fitness of a physician to transfer from one state to any other without again passing an initial examination. The personal equation in the conduct of examinations was clearly demonstrated. This was particularly brought out by certain reminiscent discussions. One state evidently places special emphasis on the ability of all candidates to use in the practical tests an ophthalmoscope properly. This results largely from the accident of having an ophthalmologist on its examining board.

Another state places considerable emphasis on the ability of each candidate to name accurately a series of surgical instruments but does not follow up this test to determine whether the candidate can or has ever used them.

In general, legislation toward greater flexibility in examinations, together with more attention given to practical tests, was urged. Undoubtedly the public should make less effort in devising rules for concealing the identity and personality of the applicant, and make more effort to select well trained and properly fitted persons for examiners, supplying these examiners with funds and equipment to conduct thorough examinations—not "unsight and unseen" through the point of a pen, but openly through face to face examinations in the diagnosis room with a series of patients as the basis for at least fifty per cent. of the test. California came in for a good deal of criticism. A well known Federal officer, for example, said he had passed the medical examinations in a number of states and those conducted by the Government. From his personal experience he considered Michigan's examination the fairest and best test, while California's was by far the worst. From individual conversations it is the opinion of your representative that much of the criticism of California's law is based upon personal grounds, especially upon the experiences of candidates who feel that they did not receive the common courtesies which should be extended to all candidates by those in charge of examinations.

REPORTS OF MEMBERS OF THE NATIONAL LEGISLATIVE COUNCIL.

The reports submitted on recent medical legislation in the several states show a very general condition of medical unrest throughout the United States. Except in a few states, medical licensing laws have remained unchanged during the past year, or have been sharply assailed with varying degrees of success in modifying them. Public health legislation has constituted the chief fighting ground, and some effective new laws have been passed. Everywhere this gain has been attended by active opposition lobbying.

The new Medical Practice Act of Pennsylvania illustrates fairly well the trend of modifications of the earlier acts which may be looked for in the next few years. This act, among its other provisions, requires the proper registration and a record of all legal practitioners of medicine in the state to be kept for public reference in the office of the Commissioner of Education. It provides for the examining and issuance of a "limited license" to qualified neuropaths, optometrists, or other practitioners of any special method of treating disease, as "limited practitioners." Persons desiring to practice massage, or various manipulations of the body without obtaining a license as a legalized physician or a limited practitioner, must work under the direction of a regularly qualified physician. The bureau having the administration of this law in hand has been given large powers in the matter of making rules and regulations governing medical practice. The personnel consists of the Commissioner of Public Education, Commissioner of Health, and five other members; it being expressly provided that a majority of these members cannot be named from the practitioners of any one legal "system" of medicine.

A MEDICAL EFFICIENCY BOARD.

It is possible that the time may be near at hand in California when a board of qualified paid men may be appointed to administer medical protection laws, just as similar boards are now provided for safeguarding the public in all relations with insurance companies, building and loan associations, banks, railroads, etc. The licensing of medical practitioners, nurses and hospitals will in all probability be under review again during the 1913 session of the California legislature.

THE PUBLIC HEALTH.

The sessions of the Conference on Public Health were largely devoted to ways and means for improving vital statistics returns, and to railway sanitation. Doctor Wilbur, Chief of the Vital Statistics Division of the Census, explained the model statistics law advocated by the bureau, and particularly emphasized the present need for bringing up the reporting of births. There are at present only two or three states on the provisional registration area for births. It is to be hoped the Medical Society may actively support the efforts of the State Board of Health to get California placed on this provisional registration area before 1913.

The activities of the Association for the Conservation of Vision were presented and interestingly discussed. The physician's part in preventing blindness, particularly from ophthalmia neonatorum, was argued at length.

Local and state measures on many subjects were discussed; and the essentials of food and drug legislation were ably presented. The control of syphilis and gonococcus infections was brought up, discussed, and as usual—dropped without definite resolutions or action. The paper by Commissioner of Health Young, on "What Education and Training are Necessary for State and Municipal Health Officers" was not read, owing to the necessary absence of Doctor Young, but the subject was indirectly discussed in many ways during the sessions. It is evident that many observers feel that the health officers of the future must be specially trained non-practicing physicians, who will be selected for merit and be given security of tenure in office during efficient service.

THE ORGANIZATION OF A COUNCIL ON PUBLIC HEALTH.

The proposed Council on Public Health was not organized, but the Council on Health and Public Instruction was requested by resolution to do everything in its power to bring about co-operative work among the large number of welfare organizations now in existence. An instance which occurred in Boston illustrates the present situation in many parts of the United States. A woman, who once had the misfortune to have to apply to a charity

organization for assistance during a temporary illness of her husband, was preparing for the birth of her second child, when this fact became known to an officer of a welfare organization. The woman's record showing that she had once required aid, her name was sent to all associations interested in any phase of eugenics or infant mortality with the result that within the space of a few months she was visited by no less than seven amateur information gatherers and instructors representing as many different societies. Each of these representatives had long lists of questions to be answered, and desired to give this mother advice, much to her personal annoyance and the disgust of her attending physician.

Such societies undoubtedly do a great deal of good, but there are too many of them. The American Medical Association can do a great service to the cause of medical sociology by aiding the judicious consolidation of these societies into a few strong organizations covering large divisions of the preventive medicine field.

The State Society in California, the medical schools, and all those interested in the health conservation movement should give immediate attention to the problem of desirable legislation to be enacted in 1913. Legislation along these lines in favor of selfish interests is certain to be introduced, and unless the medical profession and the general public working together devise liberal, effective statutes to meet the points raised in favor of selfish bills, it will be difficult for the legislators to detect the "flaws" in the latter.

MINUTES OF THE ANNUAL MEETING OF THE CALIFORNIA ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS, APRIL, 1912.

The annual meeting of the California Association for the Study and Prevention of Tuberculosis was held Wednesday, April 17th, at the Hotel Del Monte, Del Monte, California.

The meeting was called to order by the President, Dr. George H. Kress of Los Angeles, and the annual report of the Secretary and Treasurer for 1911-12 was read.

It was moved, seconded and carried that the report be accepted and ordered placed on file.

It was moved by Dr. W. Jarvis Barlow and seconded by Dr. Geo. H. Evans of San Francisco, that the report of the Secretary be published in the STATE JOURNAL and also that it be given publicity in the lay press. Motion carried.

While discussing this motion the consensus of opinion was that it was desirable that emphasis be placed upon the fact that the financial balance for the year was wholly inadequate for carrying on the work of such great magnitude as that of attempting to combat tuberculosis in the State of California.

The matter of charging for membership in the State Association was brought up for consideration, but no action was taken.

There was also some discussion of the subject of moving picture films for illustrating public health lectures. No action was taken on this matter.

It was moved, seconded and carried that the Association proceed to organization.

After some discussion of the plans for the ensuing year, it was decided to proceed to the election of officers.

For the office of President for the ensuing year, the name of Dr. George H. Evans, of San Francisco, was presented, and duly seconded.

There being no further nominations the Secretary was instructed to cast the ballot of the California Association for the Study and Prevention of Tuberculosis, for Dr. George H. Evans of San Francisco, for President for the ensuing year, and the ballot was cast.

For Vice-President, Dr. Robert A. Peers of Colfax, was nominated.

There being no further nominations the Secretary was instructed to cast the ballot of the Association for Dr. Robert A. Peers of Colfax for First Vice-President for the ensuing year. The ballot was cast.

For Second Vice-President the name of Dr. Edward von Adelung of Oakland, was presented.

There being no further nominations the Secretary was instructed to cast the ballot of the Association for Dr. Edward von Adelung of Oakland, for Second Vice-President for the ensuing year. The ballot was cast.

For the office of Secretary and Treasurer, the name of Dr. George E. Tucker of Riverside, was presented.

There being no further nominations the President was instructed to cast the ballot of the Association for Dr. George E. Tucker of Riverside, for Secretary and Treasurer for the ensuing year, and the ballot was cast.

It was moved, seconded and carried that the officers elected, act as a committee of the whole, unless the Constitution and By-Laws made other provision.

The nomination of a Board of Directors was next in order.

It was moved, seconded and carried that the President appoint a committee of three to act as a nominating committee, and in accordance with that motion the President appointed Dr. Robert A. Peers of Colfax, Dr. Edw. von Adelung of Oakland, and Dr. George E. Tucker of Riverside.

The committee brought in the following report for nomination for Directors of the Association:

1. Dr. George H. Kress, Los Angeles.
2. Dr. F. M. Pottenger, Los Angeles.
3. Dr. W. Jarvis Barlow, Los Angeles.
4. Dr. C. C. Browning, Los Angeles.
5. Dr. George E. Malsbary, Los Angeles.
6. Dr. L. M. Powers, Los Angeles.
7. Mr. S. C. Evans, Riverside.
8. Mr. E. S. Moulton, Riverside.
9. Mrs. M. M. Pentoney, Riverside.
10. Dr. F. C. E. Madison, Pasadena.

11. Dr. Gayle G. Moseley, Redlands.
12. Dr. T. C. McCleave, Berkeley.
13. Dr. G. Rinehardt, Berkeley.
14. Mr. J. L. Donahue, Oakland.
15. Dr. Walter McArthur, San Francisco.
16. Dr. J. N. Force, Berkeley.
17. Dr. H. G. Broderick, San Francisco.
18. Mr. Jesse Lillianthaw, Sacramento.
19. Dr. W. F. Snow, Sacramento.
20. Col. Harris Weinstock, Sacramento.
21. Supt. Edw. Hyatt, Sacramento.
22. Dr. H. S. Warren, Coalinga.
23. Dr. Frederick W. Browning, Hayward.
24. Dr. S. T. Pope, Watsonville.
25. Mr. Slater, Santa Rosa.
26. Senator Birdsall, Auburn.
27. Assemblyman Guild, Chico.
28. C. M. Richard, San Jose.
29. Dr. Henry Stamin, Pasadena.
30. Dr. Robert B. Sweet, Long Beach.
31. Dr. J. A. Parks, San Diego.

There being no further names offered, these gentlemen were elected as Directors for the ensuing year.

The Secretary was instructed to cast the ballot and the ballot was cast.

It was moved by Dr. Kress and seconded and carried that the Association ignore the pro rata assessment until the Constitution and By-Laws of the Association have been amended.

It was moved by Dr. Kress and seconded that it be one of the functions of this organization to give publicity to unsanitary and deplorable conditions which exist in any place in the state, and it was further moved that the Secretary be instructed to have abstracts of the report printed and that the Directors be called upon to give publicity to these abstracts. The motion was seconded and carried.

It was then moved by Dr. Kress and seconded, that the Secretary be given a salary of $60 per month and be allowed $25 per month for clerical assistance.

There was then offered an amendment to the motion to the effect that the Secretary pay the stenographer or clerical assistant for service actually rendered and an itemized statement accompany the claim.

By consent of the originator of the motion this amendment was incorporated as read and the motion carried.

It was then moved and seconded that a hearty vote of thanks be tendered the retiring President and the Secretary of last year, which motion was unanimously carried.

At the request of the Secretary an auditing committee was appointed consisting of Dr. G. E. Malsbary and Dr. F. M. Pottenger.

There being no further business before the Association, the meeting adjourned to meet at the call of the President.

GEO. E. TUCKER, Secretary.

MEETING OF THE DIRECTORS OF THE CALIFORNIA ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS, APRIL 17, 1912.

At a call meeting of the Directors of the California Association for the Study and Prevention of Tuberculosis, held at the Hotel Del Monte, Del Monte, California, the following business was transacted:

The President, Dr. Geo. H. Evans, appointed Dr. F. M. Pottenger of Los Angeles, Dr. C. C. Browning of Los Angeles, Dr. F. C. E. Madison of Pasadena, Dr. W. Jarvis Barlow of Los Angeles, Dr. George E. Tucker of Riverside, as a committee on the Constitution and By-Laws.

It was moved, seconded and carried that the Secretary be instructed to mail copies of the press services of the National Association for the Study and Prevention of Tuberculosis to the Secretaries of the various local Anti-Tuberculosis Societies.

It was moved by Dr. Peers of Colfax, seconded and carried that should a request come from any community to have an anti-tuberculosis society formed, he recommends that the local society be asked to pay the expenses, provided that the President and Secretary decide that such local society should pay such expenses.

It was then moved and seconded that the Committee on Constitution and By-Laws be instructed to change the By-Laws to read:

"That any member of any local Anti-Tuberculosis Society, affiliated with the California Association for the Study and Prevention of Tuberculosis, was a member of the State Association."

The motion carried.

It was moved, seconded and carried that the Committee on Constitution and By-Laws be instructed to change the By-Laws to read that:

"Any one not a member of a local Society desiring to become a member of the California Association for the Study and Prevention of Tuberculosis, could do so by paying a fee of $1.00 or more."

It was moved, seconded and carried that a committee of three be appointed to co-operate with the Tuberculosis Commission of the State Board of Health and with the Committee on Public Policy and Legislation of the California State Medical Society.

After some discussion of various matters relative to the work for the ensuing year, the Secretary was instructed by the President to notify the various Directors of their election and to mail copies of his annual report to the Secretaries of all component societies and the members of the Board of Directors.

It was moved, seconded and carried that this Association render their co-operation to the State Superintendent of Schools, Mr. Edw. Hyatt, in preparing a public health bulletin for teachers.

It was moved, seconded and carried that the Executive Committee of this Association be empowered to try to arrange for having a symposium on tuberculosis for the program of the next meeting of the California State Medical Society.

GEO. E. TUCKER, Secretary.

REPORT OF THE SECRETARY OF THE CALIFORNIA ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS, 1911-12.

GEO. E. TUCKER, M. D., Riverside, Secretary.

At a meeting of the California Association for the Study and Prevention of Tuberculosis held at the Hotel Potter, Santa Barbara, in April, 1911, in order that the State Association might remain in existence and at least continue to be the parent organization for the state, Dr. George H. Kress was elected President, Dr. Robert Peers, Vice-President, and Dr. George E. Tucker, Secretary and Treasurer.

It was presumed that the duties of the Secretary for the ensuing year would be to answer occasional letters and to forward copies of the press service of the National Association to the various newspapers of the state, until the funds in the treasury became exhausted.

As Treasurer there was placed in my hands $25 with which to carry on this work, and some time later $2 was received as membership fee in the organization.

Fortunately there was some stationery on hand and the Bulletin quietly and unceremoniously passed out of existence. Press services were mailed until the $25 was exhausted, and to all intents and purposes the California Association for the Study and Prevention of Tuberculosis was in existence only to the extent outlined at this meeting.

In a letter dated August 1st, 1911, the Secretary of the National Association for the Study and Prevention of Tuberculosis requested that the State Society act as state agent for the sale of the Red Cross Christmas Seals, under the agreement that the National Association should receive 12½ per cent. of the gross proceeds, the State Association to receive whatever percentage they and the local societies were to decide upon, 12½ per cent. being indicated as a just percentage, and the local societies to retain the rest.

During my absence in the East Dr. Kress kindly attended to the making of preliminary arrangements and on my return I took up correspondence with the various societies and after some delay it was agreed without any dissenting society, to pay 12½ per cent. to the National Association and 12 per cent. to the State Association. The Los Angeles Society, however, voted to pay 20 per cent. of the gross proceeds into the state organization.

The sale of the Red Cross Christmas Seals was handicapped as a result of the delay in completing arrangements between the local and state societies. The campaign should have been started early in October, but it was not until the 30th of November that the first shipment of advertising material was received.

Your Secretary was obliged, without having any previous experience to estimate the probable number of seals which might be sold and to ask for the total amount of advertising material allowed for the number of seals ordered. On the basis of the population of the state and the small number of component societies, 2,000,000 seals seemed only adequate, and on the basis of the number suggested by the various secretaries throughout the state 2,000,000 were at least twice too many.

Late in November it was deemed advisable to order another million and one-half of seals, together with the full allowance of advertising material. This shipment was received by express on December 2nd.

Upon advice from San Francisco 1,000,000 seals were ordered shipped direct, together with advertising material, making a total of 4,500,000 seals received from the National Association.

The Los Angeles Society, however, experienced a great deal of difficulty in obtaining permission from the school authorities of the City of Los Angeles to place the seals into the hands of the school children, and at the eleventh hour it was necessary that the Secretary of that Society have 3,000,000 seals printed, making a total of 7,500,000 seals distributed throughout the state.

Of this number

San Francisco	received	1,500,000
San Diego	"	200,000
Los Angeles	"	4,600,000
Pasadena	"	20,000
Redlands	"	20,000
Stockton	"	200,000
Sierra Madre	"	4,000
Santa Ana	"	10,000
San Jose	"	400,000
San Rafael	"	50,000
Alameda County	"	150,000
Sacramento	"	250,000
Riverside	"	96,000
		7,500,000

In advertising material there was distributed:

80,000 envelopes.
80,000 inclosures.
2,800 billboard posters.
2,800 wreath cards.
8,000 For Sale Here cards.
200 large electrotype cuts.
100 small electrotype cuts.
20 three-inch electro cuts with story.
20 six-inch electro cuts with story.
5,000 buttons.
200 slides of the Red Cross seal.
20 lectures.
10 sets of slides to illustrate lecture.

EXPENSES OF CONDUCTING CAMPAIGN.

Express and freight	$ 85.51
Postage	9.08
Telegrams	20.78
Long distance	7.99
Labor in packing, etc	9.00
Stationery	18.15
Drayage	5.90
Stenographer	100.00
Hardware, hammer, nails, etc	1.45
Account book	.10
Map of California	1.95
Buttons	27.50

Lantern slides	57.50
Electrotype cuts	11.40
Photographs of window display	3.20
Cord, adhesive	.70
Dr. Tucker, expenses to Los Angeles	5.00
Dr. Tucker, expenses to Los Angeles Miscellaneous	10.00
	$375.21

RETURNS FROM SALE OF SEALS.

Society	No. Received	No. Unused	No. Sold	Per. to State	Per to Nat. Assn.
San Francisco	1,500,000	857,525	642,475	$ 770.97	$ 803.09
San Diego	200,000	110,852	89,148	106.97	111.43
Los Angeles	1,600,000	4,200,000	200,000	400.00	250.00
L. A. School	3,000,000		200,000	400.00	(338.95) Printing
Pasadena	20,000	6,659	13,341	16.00	16.67
Redlands	20,000	11,611	8,389	10.50	10.50
Stockton	200,000	120,000	80,000	84.00	100.00
Sierra Madre	4,000	769	3,231	4.04	4.04
Santa Ana	10,000	9,049	951	4.82	1.18
San Jose	400,000	317,394	82,606	99.12	103.25
San Rafael	50,000	33,373	16,627	19.95	20.78
Alameda C't'y	150,000	84,997	65,003	78.00	81.25
Sacramento	250,000	163,743	86,257	90.57	107.82
Riverside	96,000	65,077	30,923	37.10	38.64
	7,500,000	5,981,049	1,518,951	$2122.04	$1648.65

Received from sale of seals	$2122.04
Expenses of campaign	375.21
Net receipts	$1746.83
Net receipts	$1746.83
Bal. from last year	43.65
Membership fee	2.00
Total amt. on hand	$1792.48

THE PATHOLOGICAL CONDITIONS OF THE EYE SECONDARY TO DISEASE OF THE LYMPHATICS OF THE NECK AND THROAT.*

By E. W. ALEXANDER, M. D., San Francisco.

Abundant and sufficient evidence has been submitted during recent years to show the marked susceptibility of the eye to endogenous toxins. The well known and invaluable investigations made under the direction of de Schweinitz, and the contributions of Lawson and continental authorities, point conclusively to intestinal putrefaction and fermentation as a cause of choroiditis and general uveitis. Likewise inflammation of the genito-urinary tract, the accessory sinuses of the nose, diseases of the teeth and gums, and other inflammations and errors of metabolism affecting more or less remote organs.

Incidental to various reports along these lines, mention has been made of the association of disease of the lymphatics of the neck and throat to inflammations of the eye. A series of cases which have from time to time come under my observation seem significant and suggestive, and prompt me to make these assertions more specific.

My conviction is, that acute and chronic inflammations of the lymphatics are responsible for conjunctivitis, keratitis, irido-cyclitis, choroiditis, retro-bulbar-neuritis and functional disability of the eyes. The products of inflammation which initiate these pathological changes are those due to the breaking down of proteids by the toxic and digestive action of bacteria, also metastatic deposits of the latter, or the bacteriacidal toxins elaborated in their growth, which probably reach the eye through the lymphatics or general circulation.

The units of this lymphatic system most frequently affected are the adenoids, tonsils and posterior cervical chains of glands. The inflammation may be due to pyogenic bacteria of the usual type, and especially tubercle bacilli or the organism of acute articular rheumatism. The glandular infection may be secondary to the throat, or primary, by passage of the organism through the tonsils and adenoids as portals of entry.

Conjunctival Lesions. These may be phlyctenular, follicular, true tubercular, or that indefinable injection of the conjunctiva and subconjunctiva associated with much redness and congestion and more or less pain, but slight secretion. The phlyctenular type is common and the cause of a large quantity of literature as to its etiology and pathology. I cannot refrain from a slight digression on this much-abused subject. In the first place I wish to protest against the term "conjunctivitis eczematosa." Such a term is very misleading and covers up an ignorance of the real or primary cause of the lesion. There may be an occasional case where one cannot discover any source of toxemia except a skin lesion, but as a rule any seborrheic or eczematous condition of the surrounding skin is simply another manifestation of the general intoxication, or secondary to the irritating ocular discharge. The term "phlyctenule," if used generically, covers all cases of this clinical group, although even this term is strictly inaccurate except for the appearance of the inflamed conjunctival area. For, as Parsons and Leber point out, there is never a blister formation, but rather a solid collection of round, polymorphonuclear and scattered giant cells. These inflammations recur and inasmuch as recurrences are often contemporaneous with colds and the presence of diseased tonsils and posterior cervical glands, I have directed my treatment in such cases to clearing up the cervical lymphatic affection in addition to the local eye treatment.

For instance, a little girl had an obstinate recurrence in a long series of such inflammations. Examination showed a strongly positive Moro and Pirquet, also posterior cervical glands. At operation I found the tonsils deeply imbedded in the throat and uncovered a collection of soft creamy white exudate under the plica triangularis. Within a few hours after the tonsillectomy the eye had cleared, and within two weeks the glands of the neck were not palpable. No recurrence has taken place during the last eighteen months. In this case the source of irritation was undoubtedly in the tonsils and the posterior cervical glands.

Frequently, in such cases, I have felt that the

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

rôle of the chronically inflamed tonsils is merely to lower the resistance of the cervical glands by absorption of products of inflammation whereby tubercle bacilli find a favorable soil for growth, and produce soluble tubercular toxins which enter the general circulation. In such cases the physical examination and general condition of the patient belies any pulmonary or constitutional tuberculosis. Parsons inclines to the belief, which is shared by other investigators, that phlyctenular conjunctivitis and keratitis are due to endogenous toxins. Recent literature points strongly to either a tubercular toxin, or those elaborated in the intestinal tract, as the most frequent cause; and when we realize that disease of the cervical lymphatics often causes a daily rise of temperature in children, marked debility, both mental and physical, gastro-intestinal disturbances with indican and diacetic acid in the urine, loss of weight, etc., it is easy to understand that phlyctenular conjunctivitis, in the majority of cases, is vastly and permanently improved by cleaning out the diseased lymphatic structures of the nose and throat, or removal of similarly diseased glands of the neck.

Follicular conjunctivitis is another exceedingly chronic and troublesome condition in some patients. It is due to so many diverse irritating factors that Parsons calls it a symptom and not, strictly speaking, a conjunctivitis. I have frequently found it associated with hypertrophied lymphoid structures of the nose and throat, and gained a quick response to my local treatment after first enucleating the tonsils and adenoids.

Keratitis. This is often associated with phlyctenular conjunctivitis, but also may be of the interstitial variety. A young boy gave a history of many recurrences of the latter lesion, extending over a period of two years, even while under the care of competent ophthalmologists. He showed a characteristic tuberculin reaction, was free from physical signs of pulmonary tuberculosis, gave a negative Wassermann, and showed diseased tonsils and adenoids and a chain of posterior cervical glands two of which were about the size of hazel nuts. The cornea had a diffuse mottled infiltration of the whole parenchyma, with one or two dense white nodules near the limbus, an associated phlyctenular conjunctivitis at the limbus, and no new vessel formation. There was an associated iritis. In this case the enlarged cervical glands were removed and found to be tubercular microscopically and by the injection of a triturated extract into a guinea-pig. The eye then improved rapidly until only a slight opacity remained at the sight of the dense peripheral nodules and no recurrence has appeared as yet. Of course he now needs a tonsillectomy.

True tubercle of the cornea is exceedingly rare and only a few cases have been reported on an anatomical basis, notably those of Haensell, Hartridge and Griffith, Baumgarten, E. V. Hippel and Schultz, but, as we find a toxic infiltration of round cells associated with a general uveitis, in interstitial keratitis due to syphilis, so also in a tubercular toxemia the involvement of the same embryologic layer posterior to the cornea may, as in my case, extend to the corneal parenchyma. It is true moreover that one cannot diagnose many of these conditions of the uveal tract from their clinical ocular appearance; and we are only led to suspect, and later feel certain, that the disease is due to other than specific toxins, by its failure to clear up under specific treatment, by its chronic and noteworthy recurring tendency, by the not infrequent lack of pain, and by its marked improvement with tuberculin, or removal of some focus of toxemia.

Choroiditis and Irido-Cyclitis. Here I refer to a case I reported and demonstrated before the San Francisco County Medical Society and which appeared in the California State Journal of Medicine November, 1911, in which a tubercular affection was apparent, both from the appearance of the eye and the fact that the eye cleared beautifully with the exclusive use of tuberculin and later a tonsillectomy. The boy had diseased tonsils and enlarged posterior cervical glands, and showed strongly positive Moro and Pirquet reactions. Otherwise he gave absolutely no physical signs of tuberculosis or syphilis, and no history of the same in his family. He was apparently a perfectly healthy child. Wassermann was negative. His tonsils were full of foul smelling cheesy deposits. After a tonsillectomy the glands soon disappeared and also the remnants of the eye trouble.

I again wish to digress long enough to emphasize the fact that tuberculosis of the choroid may manifest itself in association with any form of general or local tubercular lesion. It was formerly thought that tuberculosis of the choroid appeared only in terminal pulmonary, meningeal, or disseminated miliary tuberculosis; but since Sidney Stephenson's contribution to this subject in 1901 many instances have been reported in apparently healthy individuals. The diagnosis in these cases is substantiated by the tuberculin reactions, associated with negative Wassermanns, and the marked therapeutic effect of tuberculin in ascending doses. In my case, which was typical, the primary tubercular focus was apparently situated in the cervical glands, and possibly the tonsils; and I assume, as others have suggested, that the pathological process in the choroid was not the well known tubercle with its usual arrangement of cytological elements, but an infiltration of round cells, and to be classified as a "tuberculeid."

Contemporaneous rheumatic iritis and chronic tonsillitis, in the light of recent teaching that the rheumatic organism invades the body through the tonsils, should certainly receive more than medicinal and local eye treatment; but ought to include an effective and permanent closure of the portals of infection by a tonsillectomy.

Retro-bulbar Neuritis. This case gave the typical signs of the disease, with vision in the affected eye 6/60. The lady had absolutely no indication of the etiology except some very large, chronically inflamed tonsils. A tonsillectomy was

refused. Electricity and strychnine relieved the pain, and improved the vision slowly to 6/15. One day the patient called complaining of the return of the original symptoms and a marked temporary bilateral amblyopia the evening before. The tonsils showed a subacute follicular involvement. At the same time the patient received word from out of town that her daughter was sick with pneumonia. During her absence of ten days she suffered intensely both from her throat and eye. On her return I removed the tonsils, with almost immediate cessation of ocular pain and an improvement of vision to 6/7 in two weeks.

In this case we probably had a pyogenic infection to deal with, from which the soluble products passed to the eye.

In regard to functional disability, the debilitating effect of the diseased structures in the throat has been repeatedly shown. Following tonsillectomy, moderately strong hypermetropic glasses, which seemed practically indispensable, have been discarded. Distressing headaches have likewise been relieved, even while the ametropic correction was in constant use; also photophobia; and twitching of the lids.

It is on the basis of functional disability of the muscles of accommodation that I advise a thorough overhauling of the throat in children afflicted with concomitant strabismus. It is a common observation that ocular muscle tone is so reduced in debilitating diseases that often a disturbing heterophoria or pseudo-nystagmus appears, and certainly in the treatment of a late or faulty developing fusion center, such as we have in concomitant stabismus, every means to improve the general nervous tone should be employed, even in the absence of subjective symptoms of lymphatic origin.

In Conclusion. Obscure and recurring inflammations of the eye are often due to soluble toxic products from diseased tonsils, adenoids, or cervical glands, which reach the eye by the lymphatics or general circulation. This is particularly true in children and in the tubercular affections of the eye. The rational treatment is obvious, viz: the complete removal of the diseased structures surgically, supplemented by the administration of appropriate tuberculin or other remedies.

Discussion.

Dr. Wm. F. Blake, San Francisco: My experience does not entirely agree with that of Dr. Alexander in that I have seen comparatively few cases that I considered due to tuberculous infection. Unquestionably there is a very direct relationship between infection anywhere in the cavity of the mouth and nose with persistent irritation inside or outside the eye, due I believe, to regional irritation of the 5th nerve, which is distributed to the inside of the mouth as well as the nose in addition to the eye. If you have in the nose or mouth some toxic or infected condition it seems to me a plausible supposition that that irritation is transmitted to other branches of the 5th nerve that supply the eye and we get a local point of inflammation. There are many cases of infection of the scleral vessels with localized edema, painful at times, in which we find no explanation of their cause in the eye and treating the eye is absolutely useless. I have two cases in mind that I will quote.

Mrs. D. came to me with that type of scleral injection and gelatinous edema which at times would break down and form a superficial ulcer. She was given general tonic treatment. Locally atropin, dionin, argyrol and subconjunctival injection of salt solution were conscientiously used. It finally occurred to me to examine the mouth and there I found the roots of four teeth; the gum on same side in bad condition. She was sent to a dentist and had the roots removed; she was cured, and I believe it was the dentist who cured her and not myself. I believe that much of the irritation of the branches of the 5th nerve and upper sympathetic is due to infection in the mouth.

On the other hand many of these cases are due to metastases of septic products. I saw a case of acute iritis present at the same time as an acute tonsillitis. In the first and second cases the Wassermann and Von Pirquet reactions were done and a urine examination made. All were negative and I feel that the contributing agent that kept up the eye trouble was the septic point in the nose and throat. If we are going to treat the eye we have to get outside the eye. Focal lesions seemingly far removed in other parts of the body are a determining factor and we cannot hope, unless we recognize the influence of the general condition, to successfully treat the great mass of eye troubles.

Dr. Harrington B. Graham, San Francisco: I think there is something beside direct infection of conjunctiva in unilateral affections of the eye responsible for these conditions. A case of recurring conjunctivitis came to the clinic having had conjunctivitis for a week; it was referred to us for examination. Looking into the mouth we found a large tonsil reaching to the middle line on the affected side, and on the other side the tonsil was normal. I took a tonsillotome and clipped off the tonsil that was projecting into the mouth and in 24 hours the conjunctivitis had disappeared and had remained away. There must have been some nervous affection and not an infection of the conjunctiva to account for the trouble in the eye.

Dr. Cullen F. Welty, San Francisco: I want to report 4 cases of recurring ulceration of the cornea; the histories of these patients was scattered over a period of 2 to 4 years. Upon these 4 cases I operated, enucleating the tonsils and they all got well and remained so. Just how these infections take place or what causes them I will leave that for the eye man to say.

Dr. P. de Obarrio, San Francisco: It is gratifying to me to see that Dr. Alexander's excellent paper tallies to a great extent with my previous paper on the hyperemia of the conjunctiva after cataract extractions without having any connection whatsoever in our writing. It is evident that a good many of the eye affections as Dr. Blake says, are not to be treated in the eye but elsewhere. There are two avenues of infection, so to speak, to the eye; through the circulation and by reflex action through the nerve supply, besides purely local inflammations, and it is well to bear in mind the influence that carious teeth will have in producing or prolonging an inflammatory condition of the eyes when there is no other cause to account for this.

Dr. C. C. Stephenson, Los Angeles: There is one point I would like to bring out in reference to the interstitial keratitis mentioned. I do not believe that enucleation of the tonsil or adenoid in interstitial keratitis will do the keratitis any good. When we realize that we have the spirochete between the corneal layers we know that no local remedy will reach it. To cure

interstitial keratitis something else must be done beside the enucleation of the tonsil or removal of the adenoid. I have found the intramuscular injections deep in the gluteal muscle of atoxyl to be the most satisfactory method of treatment. Mercury must be given internally at the same time. From 8 to 12 injections of from 3 to 7½ grains of atoxyl injected weekly will cure the majority of cases. No claim is made, however, that this remedy will clear up an organized opacity due to inflammatory action resulting from bacterial activity.

Dr. E. W. Alexander, San Francisco: In the light of Dr. G. de Schweinitz's careful investigations, and the fact that these patients improve so very much in general health coincidently with their eye improvement I must conclude that the irritation is more than likely a toxic affair and not a reflex nerve involvement. It is a well-known fact that a large percentage of diseased tonsils and enlarged cervical glands are tubercular and my cases certainly show therapeutically and by the various tests a circulating toxin of that type. In closing I wish to make a plea for a more thorough and scientific study of internal medical and laboratory methods of the general system in these obscure eye inflammations. I am satisfied that many cases are incorrectly diagnosed but get well for a while with local treatment and doses of mercury and iodides. Invaluable information to the patient and interest to ourselves will be obtained by a more comprehensive study of the system as a whole.

A PROPOSED CODE OF PUBLIC HEALTH REGULATIONS FOR CALIFORNIA.*

By JOHN N. FORCE, M. D., Berkeley.

In the year 1824 one Stephen Dodd, being pastor of the Congregational Church in East Haven, Connecticut, published a thin little volume wherein was set down the history and vital statistics of his town, between its settlement in 1664 and the year 1800. Those who are inclined to charge our modern congested cities with every crime against public health may read with profit the story of East Haven.

In 1736, being then about 500 souls, the town was visited by a sickness of a throat ail which carried off twenty-six persons of all ages. Likewise in 1742-43 there died of a dysentery with fever no less than sixty. From then on the record shows an approximate annual death rate of thirty per thousand for dysentery and fifteen for a canker rash among the children. Is this not a striking commentary on the belief that the simple country life makes for resistance that can afford to ignore sanitation? Many people will tell you that as we live closer we get dirtier, and of course filth breeds disease. There is only one thing harder to do than get rid of a time-honored popular belief, and that is to make a new fact penetrate the mass.

A new fact has emanated, let us say, from some quiet worker in a laboratory, who publishes it in an ultra-technical journal read only by the "anointed." It may perhaps attract the attention of some one who is writing a text-book. Of course nowadays there are precious few books for graduates. Every one must address students and tell it all. Tell what he knows and ballast with junk. The pearl of price is buried deep in the mud, and the average reader, not being of the "anointed," roots it up with his nose, tosses it to one side, and goes on feeding on the old familiar theories. And the laboratory men go on wondering why the practice of public health lags so far behind the principles.

After all the health officer who stumbles over this new pearl is not so much to blame. There are several reasons why he cannot bind it upon his forehead for the world to see. There is first the bogy of private practice. The fear of offending a conservative clientele by a too radical departure, has deterred many a man from trying out the new thing. There were certain tender toes which must never, never be trod upon. It was safer to abide by an old popular opinion than to mould a new one. Then again, there were the city ordinances carefully designed not to conflict with certain ichthyosaurian state laws. The new pearl did not shine well with these as a background. It was certainly safer to go on collecting dead cats and fumigating, with pleasant little excursions to tear up some plumbing following a case of diphtheria or typhoid. Even if he did dream dreams and see visions, he could not act alone. Many things required a definite state support and this was lacking. Lacking, alas, in spite of a growing popular demand for state regulation where several communities are jointly affected. Under it all he felt a smoldering popular dissatisfaction with the old tradition, fanned busily by certain interested factions; yet, tongue-tied by fear, convention, ethics, tradition, and lack of support he could not cry out and save his people.

Saddest of all, his foes were "those of his own household." His professional brethren would have indicted him on the two counts "advertising" and "trying to drum up business," if he had attempted to popularize his information. The medical profession will some day have to answer a heavy charge of unfairness in Public Health relations. Unfairness to the public in not demanding a high grade of Health Officer, and unfairness to the Health Officer in not holding up his hands, before all the people. Holding up his hands, first of all by abandoning the black cloak of medieval mysticism and giving information to the people. Holding up his hands by keeping in touch with new thought. Perhaps then when your Health Officer holds out to you this pearl of price, you may recognize its value. Finally, holding up his hands by helping to give him modern health ordinances, with self-starters, wind shields, large gasoline and oil tanks, and a full equipment of lamps.

The old laws are concerned with such things as sewer gas, effluvia, noxious odors, air contamination, and character of soil; and how diligently all these things have been investigated as carriers of disease. A puff of ill-smelling smoke contained a charm against the diseases which lurked in a small piece of dead skin. The surgeons long ago stopped the carbolic spray in operating rooms, and

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

depended on clean hands and dressings. This fact is one of the neglected pearls of Public Health practice, for in very few hospitals has medical asepsis replaced segregation by diseases, and room isolation.. Everybody's grandmother can tell of a case of scarlet fever carried by a shawl wrapped around a child yet peeling. In England where they have been using isolation hospitals for many years, the time in hospital has been cut from an average of 45 days to 29+ days, by release on a basis of cessation of nasal and aural discharges, rather than skin desquamation, and a singular thing is that this has not increased the percentage of return cases either.[1] Added to this clinical experience we have the declaration of Lesage that the contagiousness of scarlet fever depends on the inflammation of the throat mucous surfaces, and the work of Landsteiner, Cantacuzene, and Bernhardt, working in different laboratories, who have obtained an erythema with desquamation in monkeys, by inoculating subcutaneously with the blood and tracheal glands of scarlet fever cases; by rubbing the buccal surfaces with scrapings from the tongues of scarlet fever cases; and smearing the throat with tonsillar swabs. Control experiments with streptococcus were negative, and after passage through several monkeys a streptococcus free ganglion would produce an erythema with desquamation.[2] Does not this mass of evidence strongly point the direction toward our precautions?

Peers of Colfax calls modern disinfection "the burning of incense to an unknown god," and the recent report of the State Inspectors of Health of Massachusetts fully agrees with him.[3]

In accepting the contact-carrier theory, however, there is a danger of going too far. Because we discredit the pythogenic theory, and do not feel concerned over dead cats, let us not overlook sanitary inspection. The problems arising out of growth, work, play, food and sleep call for much effective supervision; while the ancient bulwark of our faith "abatement of nuisances" takes on a new meaning when viewed from the standpoint of rat, fly and mosquito control.

In the magnificent game of pool played by executive authority after the close of the last legislature, a ball marked "Senate 182" dropped into the pocket accompanied by the sighs of many Public Health workers. This bill provided for the appointment of Sanitary Inspectors by County Boards of Supervisors, but only after examination by the State Board of Health. This would have been the overture in a program of increased efficiency in Public Health administration, based on the two important factors, centralization and standardization.

Methods of Public Health administration should rest on a scientific foundation. The reason for every regulation should be free from tradition and superstition and be based on our best research information. Centralization makes new facts easily obtainable by the local Health Officer and gives him definite help to overcome the before mentioned handicaps. Every Health Officer should become in larger degree, a State Officer. His appointment may be local, but if his salary is paid in part for service to the state, the state may demand in return, certain qualifications. The principal one of these of course is knowledge of the profession of Public Health, and it would be a short step to the maintenance of a state register for eligibles as Health Officer, or a state license to practice Public Health. These officers would naturally look to the state for standard methods of procedure based on modern lines of thought, sharply defining the powers and duties of officers and directing or suggesting ways of meeting various local complications.

Within the year the California State Board of Health has appointed a committee of persons interested in Public Health to devise a code of standard methods of Public Health administration. This committee expects to issue progress bulletins from time to time, and bespeaks for them your consideration and helpful criticism, to the end that we may "first clean the inside of the cup that the outside may be clean also."

1. Report of the committee on Communicable Diseases, American Journal of Public Health II, 2, p. 122.
2. Etiology of Scarlet Fever. Pasteur Institute Bulletins, 1911, p. 458 et seq.
3. Study of Disinfection. Annual Report, State Inspectors of Health of Massachusetts, 1910, pp. 108-120.

THE OPERATIVE PROCEDURE IN HYPOPHYSEAL AFFECTIONS.*

By H. B. GRAHAM, M. D., San Francisco.

If one were to attempt to describe all the proposed methods for reaching the hypophysis, it would fill a volume. Point at the hypophysis from any direction from the anterior half of the skull and some one has reached the desired point by that route, either on the cadaver or the living. The first attempt was made some years ago, but it has been the last five years that have produced the deluge of operative procedures. They may be most simply classified into intra-cranial and trans-sphenoidal, the latter being again divided into nasal and buccal, and the nasal again into superior, inferior and lateral, the last including the orbital route, which would be the most natural route to take in case of the absence of one eyeball. This, to my knowledge, has never been done on the human being, although the sphenoid has been entered from this point.

The intra-cranial routes are considered to be the most acceptable for all tumors which are growing upward into the brain tissue as it is hopeless to get as good a view of the structures immediately surrounding the hypophysis from any trans-sphenoidal route, whereas those tumors pushing their way into the sphenoid are readily accessible from below, especially the cystic variety which are so common in this region. The intra-cranial routes which have been successful on the human being are two in number, the temporal and frontal. Caton and Paul, Horsley and Caselli, were the early exponents of the middle fossa route, and Krause, Killiani and McArthur of the anterior fossa, Krause preferring the extra dural method, and Killiani the intra-dural. The latter seems to have presented the fewer technical difficulties.

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

The oral operations consist in a removal of the hard palate and exenteration of the nasal content to and including the sphenoid, or of an operation through the soft palate, or beginning on the neck through the base of the tongue to the valeculum and thence to the sphenoid. This latter method necessitates a preliminary tracheotomy but gives a complete view of the desired field. Kocher says that the bucco-nasal method gives the best view of the hypophysis of all the various operations.

The paths that have become most popular of late are the nasal ones and interest us as nasal surgeons more than those just mentioned. They should have as a basic principle the reaching of the posterior wall of the sphenoid with the least possible mutilation to the nose, but with the greatest possible space in transit. The early efforts (Schloffer, von Eiselsburg and Bode) took but little account of the conservation of the nasal contents, but gradually there has developed a desire to perfect the various sub-mucous methods of resection of the septum until we have the superb technical triumphs of T. Kocher and of Hirsch.

The superior nasal routes, advocated by von Eiselburg, Schloffer, Hochennegg, Loewe and Kocher, either include a removal of the anterior and inferior walls of the frontal sinuses together with the middle turbinates, ethmoids and superior portion of the septum,—the operator hugging the cribriform plate,—or simply a sub-mucous resection of the septum in its superior half after entering the nose by clapping back the two sides like swinging doors,—or any procedure between these two. They require a disfiguring operation without giving any better view of the field than do those done by the inferior nasal route, as advocated by Hirsch, Kanavel, West and Cushing, or the lateral route as done by Marschik and Chiari.

Hirsch does a Killian resection of the septum through the anterior nares, with or without a removal of the turbinates, as occasion demands, and carries the resection back to the posterior wall of the sphenoid. Kanavel and West, working from the anterior nares, resect the septum, bone and mucous membrane included, with or without a resection of the middle turbinate. Cushing does the same, entering the nose by lifting the upper lip. The most serious problem is not reaching the posterior wall of the sphenoid, but entering the *sella turcica* with the chisel. After doing the operation a number of times on the cadaver, it becomes apparent that one can very easily enter the skull too high or too low, but if caution is used in a preliminary X-Ray of the region and in not chiseling too far in any direction, but little damage can be done as long as one keeps in the median line. One must keep in mind the fact that the septum of the sphenoid is no guide to the median line of the skull.

Marschik and Chiari have operated a couple of cases successfully lately by making a skin incision from the inner canthus of the eye down to the middle *processus frontalis* of superior maxillary, the middle turbinate, ethmoids, lamina papyracea and posterior portion of the septum are removed, the eyeball being pushed outward during the process: they claim expedition and a clear view of the case, but on the cadaver I have not found any particular advantage over the inferior nasal routes, and the angle at which one approaches the *sella turcica* is more likely to lead to error than if the operator keeps in the median line.

The large number of routes suggested and a limited amount of material to try them out on, show that the last word has not yet been said as to the best operative procedure; but I believe that in the future there will be more of this work done by the intra-nasal surgeon simply because of his skill in handling reflected light and his increasing tendency to conserve the nasal contents and avoid mutilating procedures in all nasal work.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of April the two following meetings were held by the San Francisco County Medical Society:

Section on Medicine, April 2, 1912.

1. Exhibition of a case of Flail-Joint following Poliomyelitis and cured by Arthrodesis after the Operation of Mr. Robert Jones of Liverpool. Dr. James T. Watkins.

2. Case Histories Exemplifying Some of the Complications of Typhoid Fever. Dr. Harold P. Hill. Discussed by Dr. R. L. Wilbur, Dr. G. H. Evans, Dr. G. E. Ebright, Dr. J. B. Frankenheimer, Dr. L. S. Schmitt, Dr. H. M. Sherman, Dr. H. B. Reynolds, Dr. J. L. Whitney, Dr. A. A. O'Neill, Dr. H. P. Hill.

3. Remarks on Bacteria of the Respiratory Tract. Dr. James L. Whitney. Discussed by Dr. L. S. Schmitt, Dr. H. B. Reynolds, Dr. J. L. Whitney.

Regular Meeting, April 9, 1912.

1. Demonstration of a Case. Dr. J. T. Watkins.

2. The Regulation of Hospitals. Dr. Wm. R. Dorr. Discussed by Dr. T. D. Maher, Dr. Geo. B. Somers, Dr. F. W. Birtch, Dr. C. Weil, Dr. L. W. Allen, Dr. R. G. Brodrick, Dr. F. B. Carpenter, Dr. H. J. Kreutzmann, Dr. F. P. Topping, Dr. V. Vecki, Dr. R. Bine, Dr. Wm. R. Dorr.

Doctor Watkins Showing a Patient Who Had Been Treated for a Paralytic Calcaneo-Valgus Following Infantile Paralysis.

By the Operation Devised by Mr. Robert Jones, of Liverpool.

After exhibiting X-rays and photographs of the patient's foot taken before and after treatment, Dr. Watkins said:

I am exhibiting this patient to you to-night sooner after the operation than I ordinarily would, because it so happens that the date of her return to the city for a removal of her cast coincides to the date of this society's meeting.

The operation has proved successful and she will now return home. The probabilities of her returning to us for subsequent demonstration are too small to justify my letting go by this opportunity to show you the results of an unusual operation for an unusually grave sequel of infantile paralysis.

You will recall that one of the principles which underlie the successful treatment of the end results of infantile paralysis requires that motion in a joint which can not be controlled should be destroyed. The reason being that if one can not control the motion in a joint, the limb is compelled to assume postures as a result of use which eventually become permanent deformities. The operation for destroying the motion in a joint was first described by Albert and named by him arthrodesis. It consists essentially in peeling off the articular cartilages and bringing the denuded bones into contact in that position in which we believe that, after union has taken place, the limb will best perform its function. The joint which lends itself most readily to this procedure is the ankle joint. A

number of operations for arthrodesis have been described, the most ingenious of them being those of Goldthwaite, of Whitman, and of Robert Jones. It has been my privilege on previous occasions to demonstrate to you patients whom I had subjected to the Whitman and Goldthwaite procedures. To the best of my belief the patient before you represents the first instance in which Mr. Jones' operation has been employed in this part of the world. Briefly the operation is as follows:

First: The prominent bands of plantar fascia are divided subcutaneously and the foot flattened with the block and hands, or with the Thomas wrench.

Second Step: An incision about three inches long is made at the inner side of the foot and occasionally at the outer side. The soft parts are then lifted up from the bones, both above and below the skeleton; next a wedge of bone is removed from the entire tarsus with its mid point at the highest part of the arch. This wedge of bone is wider above than below, and at the inner side than at the outer side. Making it larger at the inner side than at the outer corrects the valgus deformity. Closing the space made by the removal of this wedge causes the forefoot to come practically into line with the heel. The wounds are now closed and the foot put up in plaster of paris in this position. Mr. Jones actually binds the forefoot to the tibia.

Third Step: One month later, after union has taken place, the ankle joint is opened by a transverse incision from behind and enough of the astragalus removed to bring the foot at right angles to the leg. At the same time the cartilages are peeled from the articular surfaces of the tibia and fibula. Mr. Jones also shortens the Achilles tendon and the posterior capsule and excises a flap of skin. The foot and leg are now held plantigrade for eight weeks, by which time good bone union will have taken place and the operation will be completed.

This is the operation which has been performed upon the patient before you. She is 17 years old, and since her fourteenth month has presented a flail joint in her right ankle. Upon this she was able to get about fairly well, though the foot was in extreme calcaneo-valgus, until approaching womanhood had so increased her weight as to cause a breaking strain to be thrown upon the soft parts of the distorted member. On reflection it seemed to me that for her particular grade of deformity Mr. Jones' operation held out the greatest hopes of relief. You will now perceive that she stands firmly upon what is in effect a "pedestal" foot. Motion in ankle or mid tarsal joint she will never have, but with this foot she will be able to get about without discomfort and fulfill with assurance her function in life.

Presentation of Case by Dr. James T. Watkins Before the General Meeting of the San Francisco County Medical Society, April 9, 1912.

The patient I am able to show you this evening presents an aggravated result of a not unusual injury. I am glad that it is possible to demonstrate her before subjecting her to operative interference. I hope later to show you the result of operation. One reason for showing her to-night, was the hope that I might hear your suggestions as to what procedures had best be undertaken for her relief and what ultimate results might be expected to follow adequate treatment.

This young lady is 18 years old, has been married for one year, and during the past five years has been a professional toe dancer, that is, a ballet dancer. Five months ago she neglected upon one occasion to put rosin on her dancing shoes and as a consequence slipped, injuring her left knee. She says that her foot slipped outward and backward from under her. Despite the pain, she was able to continue her performances for two weeks longer. At times, particularly at night, the pain in her knee was very great. I might say by way of parenthesis that these gymnasts, like football players, become very largely indifferent to pain as we ordinarily understand it. At the end of two weeks, her knee being very much swollen, she was taken to a hospital in New York. Here the knee was aspirated, constant pressure in the form of an elastic bandage applied and ice bags kept constantly upon the joint. No attempt was made to straighten the leg or to immobilize the joint. Subsequently she was subjected to rather vigorous and exceedingly painful passive motion. After seven weeks, being but little, if any, improved, she went home. For eight weeks she lay in bed without medical assistance. Since then she has got about with her knee flexed as you see, to an angle of 40 degrees.

She has been referred to me by a colleague, asking me to do whatever can be done for her at this stage.

Physical Examination: The joint is not hotter than its fellow. There is no redness, no tenderness, no swelling. Bone tenderness, which might be elicited by deep pressure, is absent. There is no muscular spasm, nor is there any apparent atrophy of the muscles of the thigh. While the joint is immobile, attempts at forced passive motion cause pain.

We have to think, of course, of an anchylosis, which is more likely to be fibrous than bony and is probably secondary to an injury. The question is, however, are we dealing with a condition wholly the result of a traumatism or is there some form of chronic inflammation engrafted upon a previous injury. We have to think of an infectious arthritis, such as may follow diseased tonsils, etc., of a tuberculous condition, of a possible gonorrheal causation, of lues. Clinically, I am convinced that it is due to none of these, though I can not delay you now with the details of a differential diagnosis. Of course, I shall verify my clinical findings by the various laboratory tests when she is in the hospital. The X-ray pictures which I now show you only give us evidence that there is no destruction of the joint surfaces.

Assuming that we are dealing with the result of an injury, a moment's recollection of the anatomy of the knee joint may enable us to reconstruct the injury which she probably sustained and suggest the pathological conditions which must be present within the joint.

The knee you will recall is an imperfect hinge joint; it being also capable of some rotation. Extension and flexion occur between the femur and the semilunar cartilages; while rotation occurs between the semilunars and the tibia. They are attached loosely (and at their anterior margins very insecurely) to the tibia by the so-called coronary ligaments. Each semilunar is wedged in between the tibia and femur and assists the lateral ligament of the opposite side to maintain the stability of the joint.

The internal semilunar, unlike the external, is intimately attached to the lateral ligaments, so that it is almost a part of it. The latter forms the inner support of the joint, the capsule being a negligible factor.

Now any injury which stretches the internal lateral ligament must exert a breaking strain upon the internal semilunar or its attachments.

If now we consider the manner in which the girl wrenched her leg—she said it slipped outward and backward from under her, which, speaking exactly means the knee was flexed, the leg abducted and the femur rotated in—it is at once apparent that this action must have thrown the greatest breaking strain upon the internal lateral ligament and the weak anterior attachment of the internal semilunar. As a matter of fact, this is recognized as the manner in which a majority of injuries to the internal semilunar occur. Frequently the torn cartilage slips into the joint. There is no locking, but a slight check on full extension of the joint. Treatment should be directed toward returning the carti-

lage to its proper place and immobilizing the limb for several weeks in full extension. Later, one would raise and flange the inner side of shoe and heel and warn the patient to walk pigeon toed so as to perotect his internal lateral ligament.

In this young woman's case it is to be regretted that she was not taken off her feet when she was first injured and that the treatment indicated was not practiced.

REGULATION OF HOSPITALS.

By WM. R. DORR, M. D., San Francisco.

Just at present two separate and distinct movements are on foot in the hospital field which have been brought forward with the intention of regulating hospitals and thus putting them in a better condition to serve the public at large.

One of these movements which took the form of a bill presented at the last legislature has had a temporary set-back in as much as although it passed both branches of said legislature it failed to be signed by the Governor. This proposed law made it the duty of the State Board of Health to license all hospitals that after a thorough investigation were found to be thoroughly sanitary in location and equipment and to revoke said license if all the provisions of the law were not observed. Certainly nothing less than this could be required of hospital authorities. There were, however, other provisions of the bill that might be considered as objectionable and which were probably the reason that it failed to be signed.

The other of these movements is the attempt of this society to classify the different hospitals of this city and to point out to its members the hospitals that come up to certain standards and recommend that those and only those be patronized by the members of the society.

It is certainly a surprise that there is no state law that designates even a minimum requirement of what a hospital should be. Any individual or association of individuals can open what they may choose to designate as a hospital, no matter how poor or inadequate the equipment that may be installed. There is, however, an ordinance in this city that requires all hospitals to have a permit from the Board of Supervisors, but about all this so far has meant in regulation is to see that new hospitals have complied with the building laws which compel hospitals to be housed in fire-proof buildings. It is possible that the state also has on its statute books some law that is equally as inadequate.

If one were to judge the intelligence and progressiveness of the inhabitants of this great state of ours by the condition of the places maintained by many of the counties for the care of their indigent sick, our boasted progressiveness and up-to-dateness would certainly be rated as way below par. And yet you will find many writers who most distinctly state that the condition of the hospitals of a community is a good index to the civilization and advancement of the inhabitants responsible for their maintenance.

A perusal of the reports of the State Board of Charities and Corrections shows that the state recognizes its duty in this regard in as much as one of the duties of this board is the investigation of the county hospitals and almshouses and reporting on their condition, but it has no power to correct the defects that may be found except to bring these defects before the view of the public in their reports which in the past have been published about once in two years and have a limited circulation. The lack of sanitation and imperfect conditions that have been found in these institutions is certainly appalling for this day and generation.

In one of the counties in which there is a good sized population composed extensively of wealthy men, their last report states that the hospital is "of wood, two stories and in poor repair, lighted by lamps and candles and the sewage runs into a ditch." "There is an operating room with poor equipment. There are some beds that should be destroyed. Occasionally religious services are held." This is surely a most edifying picture of modern sanitation and modern methods for caring for the unfortunates that may be compelled to apply for treatment.

In another county, one of the largest in point of population in the whole state, the 450 odd patients are occupying quarters in old wooden buildings, "some of them too old for use," and "there are not enough good accommodations for more than 300." And yet this same county a few months ago failed at an election to authorize a very moderate bond issue that would have been a long step toward removing the present disgrace.

The above instances simply emphasize the urgent necessity not only of laws, but also of educating all classes of the people along hospital lines, for until this is done practically no headway can be made toward righting conditions similar to the above found in many counties throughout the state.

It would seem that where counties show such lack of ability or inclination to properly conduct their hospitals that the state should have the power to step in and at least bring the treatment of the sick poor up to a plane of common decency if not to a plane of approved humanity. If this were done it would also tend toward giving them a common standard and common methods of presenting reports and of accounting so that one could be accurately compared with the other. This would undoubtedly be found a great help to all concerned. At present it is impossible to get reports from many that are of any value whatever. The finances are frequently so involved that no one knows just what it does cost to run them.

With the above condition existing in the county hospitals, which are so directly the expression of the will of the people as a whole, it is no wonder that no successful attempt has been made in the past toward regulating the hospitals that are run by individuals and private corporations. Naturally this class of hospitals does not need regulation along the same lines as shown in the comments on county hospitals for the good and sufficient reason that hospitals run as the county hospitals are run do not appeal to the public who are paying for their care, and if run at all would shortly die a natural death. And yet there are privately owned so-called hospitals that are as decided a menace to the best interests of the individual and the community as the county hospitals.

As far as is known no successful attempt has been made to classify private hospitals, and we must admit that it is not an easy task, as there so many points of view. All recognize the classification of hospitals made by most authorities of general hospitals and special hospitals—the general treating the ordinary medical and surgical cases, and the special treating some particular class of cases as tubercular, cancer, infectious diseases, etc. The above classification is all right as far as it goes, bnt in no way helps us in the consideration of privately owned hospitals as far as state or municipal control is concerned.

For this purpose the following groups are suggested:

1. Commercial hospitals.
2. Endowed hospitals.
3. Partly endowed and partly commercial.

The commercial hospitals comprise certainly the largest group of California hospitals and are run to make money from those able to pay for treatment. Some use this money for the treatment of worthy indigent cases and can thus be classed as charitable institutions, but the majority are purely and simply money-making schemes and many are run with such poor equipment and such a lack of real medical supervision that it seems improper to dignify them with the name of hospital and can really be classed as a menace to the community at

large. Besides this, some have adopted such sharp commercial practices that they not only are a menace to the health of the community, but also to the pocketbooks of the unsuspecting public.

Completely endowed private hospitals are so extremely rare in California, in fact so very few exist that it is not worth while considering them except to note that they embody all the ideals that the word hospital implies.

Hospitals that fall in the third class are those having an endowment which perhaps has given them their property, buildings and an income sufficient to pay for a certain amount of charity work, but not sufficient to run their entire plant. They are therefore compelled to take in pay patients and to make money from them so as to do more charity than their endowment permits them to do and to be able to keep their plant running and out of debt. They are generally run by a board of control composed of representative men or women who keep the standards up to modern requirements and are constantly endeavoring to enter the class of completely endowed hospitals.

It is therefore the commercial private hospitals that, at present, are being considered by this society as needing regulation.

For this purpose, the society appointed, in March, 1911, a hospital commission to rate the various hospitals according to their compliance with certain rules of conduct set down as the consensus of opinion of the members of this society.

On October 28, 1911, this commission reported, placing certain hospitals in a list as acceptable, certain ones as provisionally acceptable and others as non-acceptable. The gist of the whole rating depends on the fact as to whether the hospitals collect the professional fees from the patients, turning over to the doctor a percentage of the fee, or whether the matter of fees is left entirely a private matter between the patient and the doctor. At the same time, they call a large number of hospitals "private hospitals," and do not rate them at all.

This report has naturally caused comment and criticism. One side of this criticism is well expressed by the editor of the "International Hospital Record" in the following words:

"The San Francisco County Medical Society evidently endeavored to see how far it could go in telling the hospitals of San Francisco how they might be permitted to manage their own affairs—and the society came pretty near going the limit. In other words, the San Francisco County Medical Society practically demands that having erected and equipped a hospital and thereby supplied to the members of the society facilities they could not possibly, nine times out of ten, provide for themselves, the association or individual owning it shall submit to the dictation of this society as to how it may be conducted. The San Francisco County Medical Society doesn't want much, does it?"

The above criticism, I think, rather aptly states one side of this matter but does not take into consideration the fact that there are private hospitals in many communities that are not conducted so as to conserve the best interests of their patrons, the public, whether they look after the best interests of the doctors or not.

The report made by the commission is not a final report so that we trust they will finally study out some basis on which all hospitals may be rated and that they will go farther and on a broader platform and direct their efforts toward eradicating other hospital evils besides those touching the pocketbooks of the doctors.

To accomplish anything worth while along this line it would seem that nothing short of a state hospital commission endowed with the power to license and regulate within reasonable limits, both the municipal and private hospitals, would be effective and it is therefore desired to suggest to this society the advisability of directing their efforts along this channel so that we may be instrumental in obtaining in this state a commission that will have not only advisory powers, but also the power to correct the hospital evils that may be found. Let us understand, however, that we must look at conditions not entirely from the side of the medical man, not entirely from the side of the owner of the hospital, but from the side of the general public, if we wish our regulation of hospitals to be effective.

And second, that the public must be extensively educated along hospital lines before we can hope to obtain anything like ideal conditions in the hospitals of this state. It is extremely easy to write the words, "educate the public," but as you all know it is quite another thing to do it, and yet it is undoubtedly the one thing that means real progress along this line.

It must be understood that the above statements are the views of one man looking at the large field of California hospitals; that these views are liable to change as more experience is gained in this field and that it is hoped that this article will serve to call out criticisms and suggestions from other workers along hospital lines so that there may be formulated and put into force proper regulation of our hospitals whether run by the state, the county or the individual, and thus make the hospitals of California models for the whole United States.

Discussion.

Dr. T. D. Maher: I have listened with great interest to this excellent paper of Dr. Dorr. The subject of the economic relation of the hospital to the physician and the hospital to the general public is a neglected one; neglected first of all in the medical colleges, neglected by the American Medical Association, by the State Association and very much neglected in this society, because these topics form a very subordinate role in the deliberations of this society. I think the relation of private hospitals is a matter for municipal control. If the Board of Supervisors has the right to designate in what kind of a building a hospital shall be installed, then it should have the powers to protect the public in the matter of hospitals. I have not much faith, however, in legislators or boards of supervisors when their intelligence is taxed concerning medical legislation. It sometimes requires the sacrifice of human life to awaken in them their sense of duty. Dr. Dorr spoke of the preliminary report of the hospital commission of this society; in regard to this we have been asked many times why the German Hospital was classified as provisionally accepted and not non-acceptable. The reason is that the German Hospital has made some concessions that indirectly benefit outside practitioners. Formerly all unattached patients going into the German Hospital were dealt with in the office of the hospital, the fees were fixed there and the physician to whom the cases were assigned only shared in the fees of these patients. Now these cases are assigned to a member of the staff and the hospital does not participate in the fees. I would like to say that the hospital commission has not heard from the French Hospital. We feel that we are a regularly constituted committee of this society, and that this is discourtesy on the part of the French Hospital. Owing to some irregularities in the Children's Hospital in determining the indigency of applicants to the Alexander Maternity Cottage the hospital was classified in the preliminary report as non-acceptable. This abuse has been corrected and in the next report the Children's Hospital will be classified as acceptable. Regarding the criticism of the editor of the International Hospital Record, this is gratuitous criticism; the gentleman is evidently not familiar with local conditions and knows not whereof he speaks. He does not know that we have a German and a French Benevolent As-

sociation, daily dealing out to their members gratuities that should be extended only to poor members. By so doing they are competing unfairly with the outside practitioner. We have a right to ask that these abuses be discontinued. These societies were organized primarily for a laudable purpose, but they soon broke away from the ideals of their organizations and now the affluent members are receiving the gratuities that were originally intended for the poor members. It has been said that the hospital commission has laid down its arms but this is not so. We started in this field without a precedent and with very little encouragement and we feel that we have accomplished some good. Conscious of this fact, we are stimulated to renew our activities in this work.

Dr. George B. Somers: I wish to express my appreciation of the privilege of listening to this paper by Dr. Dorr, first because the subject is one that is not frequently taken up, and secondly because Dr. Dorr is among the few members of the profession who have made a special study of hospital management and hospital problems and whom we have come to look to as an authority on the various subjects connected with hospital work. A hospital is one of the most important institutions that can exist in a community; an institution which takes care of the sick, which is engaged in the work of restoring sick men and women to health, which assumes the care of sick members of the family so that the producers of the family may go about their work, is to my mind a matter of extreme importance to the state. The state, therefore, is interested in the subject of hospitals and it follows naturally that the state not only should take a deep interest in these institutions but should assist them and encourage them and also insofar as it is interested should step in and regulate them. I believe the state has the right and it is the duty of the state to take cognizance of these institutions and should see that they reach a certain standard and that they are properly equipped. The law steps in in reference to a ship that takes passengers to sea, provides that the ship shall be safe, properly manned and equipped, and the state must, if it sees this problem in the right light, step in and see that institutions that take care of the sick are properly equipped and housed. As far as the relations of a society like the San Francisco County Medical Society is concerned with the problem of organized hospitals, that is a question that must be thoroughly considered and will continue as a subject of discussion for some little time longer. According to the resolutions passed by this society one would infer that the society assumes the right of coercing the hospitals, of dictating to the hospitals along certain lines of equipment and management. It seems to me that a medical society should assume the relation of an adviser in reference to the problems connected with hospitals; make investigations and rather attempt to set a standard as to what hospitals should be and perhaps defining what should constitute a hospital. That question has not yet been solved and we may properly ask what does constitute a hospital. I was reminded of this question by the remark made by a friend of mine the other day who said he had asked a certain hospital that a blood count be made. The reply was that there was not anybody in the institution capable of making a blood count and that any work of that sort would have to be done on the outside. The thought immediately occurred to me whether this institution could properly call itself a hospital. A society of this sort should attempt to formulate a plan as to what necessary equipment should be in a hospital. This brings to my mind the problem of the laboratory workers of a hospital, positions that are commonly filled by internes. Hospitals find it difficult if they attempt to carry on laboratory work within their walls to have proper laboratory workers. A hospital does not encourage study within its walls and does not encourage the presence of students and laboratory workers. A hospital that does not encourage study within its walls and does not encourage the presence of students and laboratory workers must fall far below the standards of a modern hospital. Edsall, in a recent article in the Boston Medical and Surgical Journal, calls attention to a point which seems to me suggestive; it is that in England many of the hospitals make a bid with the medical schools to provide for them internes and instruction; in fact, they endeavor to make the hospitals teaching institutions. He mentions an instance where a hospital was deprived of its teaching staff by some change in the plans of a college and the hospital immediately demanded damages from the institution for lowering the standing of the hospital by taking away their teaching staff. An institution which encourages teaching within its walls must reach a higher standard than an institution which avoids this proposition. I must say that I am in favor of Dr. Dorr's proposal that this society should make a stand for the formation of a state commission for the regulation of hospitals; he also spoke of the necessity of educating the public, but I feel that that education should be extended as well to the profession; they should be taught what a hospital should be, what should constitute a hospital, what they should demand in the hospitals which they patronize. Finally, I feel that the efforts of this society would be better directed in attempting to solve or assist in solving problems connected with hospital work rather than dictating to institutions to live up to a certain standard.

Dr. Fayette W. Birtch: Eighteen months ago the hospital commission was appointed and it then met with many of the difficulties which Dr. Somers now has in mind, as: What is a hospital? What should be the relation between hospital and physician, between hospital and patient, between physician and patient? The commission was able to have adopted on March 14, 1911, a set of resolutions for the regulation of hospitals. The commission has gone about this matter very slowly in order to let the hospital people and the Medical Society gradually get the import of these resolutions. How much this commission will be able to do in enforcing these rules depends wholly on the personnel of the county society. These resolutions pertain only to the so-called "ethical hospitals" of the city. The "wild-cat hospital associations" must be taken up in a legal manner. Most of these hospital associations have no financial backing, and the people who invest their money in them have no assurance that such associations will be able to assume their liabilities. For these reasons the hospital commission has obtained legal advice on this point. There is a decision in the courts now on appeal and if sustained, will compel these corporations to operate under the insurance law, which means the deposit of a very large bond. Many of these "wild-cat associations" will be unable to meet this, and thus will be closed out. From the physicians' standpoint these "wild-cat associations" are quite a different matter. Frequently, we find men engaged in this sort of hospital practice who are inexperienced to some degree and who are suddenly launched into the midst of a big practice, which consists mainly of surgery. Naturally, the kind of surgery they do is not always the best. The patients who fall into the hands of these men are easily convinced that they should be operated upon, and they are more easily persuaded to submit, for they pay only a dollar a month and think they are getting something for nothing. These hospital association methods are broadcast; they are bringing in the midst of us a lot of bad work and are thus lowering our professional standard which

reflects on all medical men. If it is necessary for these hospital associations to exist for the public, then it is the duty of this society to recognize them and try to regulate them, so that the stigma will be removed from those engaged in this class of work, and more than that, the public may be reasonably assured of good and competent medical and surgical attention. The hospital commission of the San Francisco County Medical Society stands for: First, that the medical profession must not be exploited by business agents; second, that the medical men should do charity whenever and wherever it is needed as such; third, that the public should be protected against inefficient medical and surgical attention, which last will be no small matter in assisting to maintain the medical profession at a very high standard.

Dr. Conrad Weil: I will speak as an ex-member of the hospital commission; the question of hospital management and hospital equipment is one which is very hard to discuss in a decisive and convincing way because it is such a recent question. I agree with Dr. Dorr's remarks that the public should be taught to know what requirements should be placed on a hospital and Dr. Somer's suggestion that we should first educate the profession is certainly an excellent one; the education of the profession must come long before we can educate the people. There is no doubt that certain requirements should exist and be enforced by the law. Just what these requirements should be in detail none of us are prepared to say at present because the question is such a new one; we ourselves are not entirely clear upon this subject; we do not know ourselves what we want of a hospital. Some have the idea that it should be connected with an institution of learning and others hold the idea that the private sanitarium has the right to exist as well where the educational feature is of secondary importance and the comfort of the patient is the first. Dr. Dorr has brought up the question of hospital regulations as formulated by the hospital commission and as an ex-member of the hospital commission I wish to say that I think the criticism read to us made by an editor in the East, and which is endorsed here to a certain extent, is not quite correct or rightly placed. The hospital commission was not appointed to draft regulations as to the equipment and running of hospitals. On the contrary, it was a commission appointed by the county society in consequence of a paper that was read by Dr. Maher in which he brought forth the damage being done to the profession by hospital associations and some reputable hospitals, and when the hospital commission drafted these resolutions it had the object in view to find a way in which the economical interests of the profession might be guarded. I think under the conditions under which these propositions were placed before the county society and adopted, they were the best propositions that could be offered for that time; the commission has never intended that these propositions should be considered as final and could not be improved upon and I think the commisison deserves the gratitude of the society rather than censure for its good intentions and earnest endeavor for what it has proposed. It would be interesting reading to look through the files of the applications for positions in hospitals when the election of members of the staffs of these hospitals takes place. We would find that the backing the commission should have in enforcing these resolutions is sadly wanting in some of the most prominent men of the profession as evidenced by the tenor of their applications.

Dr. Lewis Allen: Having lived in hospitals for some while some problems have come to me more strongly than others. When this commission commenced its work I felt that the only way to go at this problem was through the hand of the law, and that hand should be strengthened by state legislation, not only for hospital requirements, but for all the conditions that surround a hospital. The commission on charities should have the power to regulate what hospitals should have training schools. It is not right that a training school should be started in a hospital or sanatorium of twenty or twenty-five patients; that should be taken charge of by the proper authorities, and such a sanatorium or hospital not be allowed to have a training school; they should be compelled to have trained nurses. It seems to me that the only way to go at this proposition is to start at the bottom; to organize a state-wide interest so that there will be some state legislation upon the subject. It would be well if the powers of the commission on charities be increased or included with those of a new commission. It may be that this problem of the hospital association can be solved by prosecution through the Postoffice Department as is done in other cases of fraud where the public is not getting a square deal; but it might be well for the commission to have a law enacted similar to that of the Germans, with changes according to the institutions of our civilization here, whereby the small wage earner receives medical care, and the dependent family is provided for by a sum paid partly by himself and partly by his employer. This necessary work could then be carried on by all well established and reputable hospitals. The well-to-do would not come within the action of such a statute. There is no doubt that these hospital associations are flourishing because there is a necessity for them on the part of the working classes. The solution of this problem, it seems to me, is economic and sociologic as well as medical, and I would urge that Dr. Dorr's suggestion that this question be given state legislation should be taken up vigorously.

Dr. R. G. Brodrick: I was very much interested in hearing this paper tonight on account of the interest we are trying to develop in the management of municipal hospitals. I feel that we have to develop a higher standard in our City and County Hospital and Dr. Somers and myself have been deeply interested in this matter. The cost of maintenance at the present time is 88 cents per patient a day and when we know how inefficient the administration can be in hospitals from political interference, we realize that the standard must be very low. An attempt has been made in the past to have a charter amendment adopted that would permit of a minimum of $1.25 per patient a day and a maximum of $1.50. It would be a splendid thing if this hospital commission in the expansion of its work endeavor to raise the standard of the municipal hospitals. As far as I am concerned it would be a welcome duty if the control of hospitals were put in the hands of the local board of health, but I think it would be an unwise thing to do. It would be better to place these hospitals under control of such a body as the State Board of Charities which is not given to such extremes from political upheavals as boards of health in large cities.

Dr. F. B. Carpenter: I would like to explain that the purpose of the hospital commission has not been, as it may appear to some to coerce hospitals, nor has it been for the purpose of compelling hospitals to follow any particular course, but some one had to begin this work, and that is the reason that this hospital commission was appointed by this society. The purpose of the commission has been to seek out and find wherein the weak points of the present-day hospitals lie, and to seek the way for correcting these. They have endeavored to do this without inconvenience to the hospitals and without bringing any hardship upon the staffs of the hospitals. We have made an effort to harmonize with the profession the staff of the hospital, and to harmonize with the hospital

staff the hospital management, which is frequently a commercial body.

Dr. H. J. Kreutzmann: This matter is an inexhaustible one, but it is necessary that from time to time we put our heads together and discuss it. A new element has been brought into the discussion tonight and that is the establishment of a standard for hospitals with the idea of having state supervision. Before it was a matter of harm done the interests of the practitioner by the different abuses that have been gradually coming up and which has come to a climax with these dollar a month societies and this question of state supervision and standardization is an entirely different matter. I have had something to say on former occasions here and in the State Medical Journal, and speaking as a member of the staff of the German Hospital, which position I have been in for many years, and I am of the opinion that if the commission wants to talk about the German Hospital they better not do that, but if they want to talk about something they better talk about the German Benevolent Association, which is different. One of the speakers has said that there is a demand for these hospital associations; it is simply a sample of the trend of our social life at the present time. We have a country here that is new, rich and independent, but in those countries where the conditions are concentrated and the people are forced to protect themselves these things are a necessity, and I think this country is coming into that state more and more all the time. These people do not pay these concerns a dollar a month to be humbugged; they do it in order to protect themselves when they are sick. They do not want to become a public burden when they are sick and they do not want to engage a physician whom they are unable to pay; when they are working they are just able to pay their daily bills and when they stop working the money is missing. Most of them are good people, honest, who do not want to be dishonest and they are entitled to form societies for their protection and nothing can prevent their forming these societies. Of course, care should be taken that they do not take in people who do not belong there and that is the difficult thing. The German Benevolent Society was founded many years ago with the noblest intentions; through the inborn wickedness of people it has developed that people took advantages which they should not do. It has always been our (the medical staff's) endeavor to fight against abuses and what we want is your support; help us to get the directors to give us what we want. But the difficulty lies in that if we make demands that are not in accordance to their ideas, they will tell us to go, and if we go there is not only one but many others, members of this association, who are willing to be members on that staff. The conditions should be that if we laid down our arms the directors would not be able to get any one to fill our places.

Dr. F. P. Topping: The earning capacity of the individual belonging to these associations has been referred to and this brings to my mind the abuses of the clinic material in the public clinics here as regards to the practitioners ourselves and our profession. Some years ago the reason for the lack of discrimination was because the colleges had to get material for their students for teaching purposes; that was all right at that time when clinics were scarce; now the material in the clinics is greatly increasing every year. For example the clinic in which I have been for the past eight years has increased 79 per cent in patients handled over the previous year and it has increased for every year previously. I have been for ten years constantly connected with clinic work and I think it is about time that something should be done to control it; the worthiness of the individuals demanding our time and our services should be investigated. There is not a man or woman in our society who will not gladly devote time to charity, but to be constantly made "the goat," to use a vulgar expression, is a little too much. We have many patients in the clinics whom I know can easily afford to pay for the services of a physician, for medical consultation, for advice, and they can also afford to pay reasonable sums for operations. I have made observations in my work and from questioning as to the number in the family, the amount of money earned, etc., I often find that a married couple without children, the husband earning from $100 to $150 per month will come to the clinic and take our free services, our drugs which are furnished at a low rate and the local treatments which are furnished for nothing. If they require an operation they enter Lane Hospital, where for $10 per week they get an excellent service, their food, and care and operation; by granting this service we are simply taking the bread and butter out of our own mouths. In some eastern states I understand there is an investigating committee that determines the worthiness of the applicants for clinic service and I see no reason why such a plan could not be carried out here. To illustrate, I went with a nurse and two students to a place south of Market to do a simple curettment as the patient could not enter the hospital for some reason or another. After the curettment I visited the patient several times. Shortly after that she came to the clinic and threw down twenty dollars on the table as payment for the services I had rendered her. Of course, I could not take it; the matter was brought before the chief of the clinic and to the college authorities and the suggestion was made by me that we might take the money and buy with it some necessary instruments for the equipment of the clinic. That twenty dollars for a curettage would have been acceptable to many practitioners. There are numerous other cases of this sort that I could mention, though I have not actual statistics. I think this matter is of importance, almost as much so as the regulation of hospitals, and I intend to bring it up later.

Dr. Victor G. Vecki: I think Dr. Somers has hit the nail on the head when he says we will have to educate the profession along these lines before we can educate the public. Every doctor should ask himself who he is patronizing when he sends his patients to certain hospitals. They should not send their patients to these high-sounding hospitals that of course do not take the money out of our pockets, but out of the pockets of our patients. The only solution is for the physicians to not send their patients to these hospitals that are unethical. I always fight tooth and nail before I let a patient go to any hospital which is unfair to the medical profession. Of course, sometimes I have to take a patient to these places but only in preference to losing the case.

Dr. René Bine: The subject of hospital regulation is one that concerns us all, and our Executive Committee is to be thanked for giving us this opportunity to discuss it, and in having Dr. Dorr express his views. We have heard him tell us in the words of the editor he quoted, that our hospital commission has "gone the limit" in laying down the law to our San Francisco institutions. Perhaps it has, but rather than criticize it for so doing, I think we should all congratulate it. Since the resolutions it presented to us have been adopted by our society and printed, our office has received very many letters from county societies throughout the United States requesting copies of the resolutions so that they could be used by the societies undertaking similar work. The Los Angeles County Medical Association is to be congratulated also upon having gone the limit, for it has adopted our resolutions practically word for word. Throughout this broad land of ours the subject is being seriously considered. The fear of failure should deter no one. Our society is

able to accomplish innumerable reforms, if, if, I say, members would only pull together. It is imperative that this society increase its membership. Los Angeles has to-day a larger society than we have, and they owe it to the fact that they know how "to get together." If every member of this society would back it up, and do his best to get more members, with a united profession we could easily force our resolutions down the throats of the directors of any hospital. In Santa Clara County the Loyal Order of Moose was unable to get a single doctor in the county to accept the position of lodge doctor. In Pennsylvania, where the miners are well organized, the physicians have likewise organized, and by standing together they have reached an agreement whereby the miners have the free choice of physicians, the latter being paid out of the lodge funds at the standard rates adopted by the county societies of those districts. These matters are becoming more and more important every day. Those of you who do not feel concerned had better read the details of what the British Medical Association is up against with the insurance bill recently adopted in spite of their protests. The Cleveland Academy of Medicine has been discussing the hospital and lodge evil for some months, and their committee presented resolutions even more drastic than ours, which the society did not adopt. They will probably bring the matter up soon again for action. The matter of the dispensary evil which Dr. Topping brought up is also a very important one. I too have long had this subject under consideration and have concluded that there is but one solution to the problem. Every case applying for medical assistance at the clinics would have to be investigated from the social point of view, and this would entail more labor than our Associated Charities could undertake. The various clinics would have to organize and salary one or two investigators and one or two clerks who would keep track of all cases in a central bureau, such as the A. C. But these investigations would naturally deprive some of the clinics of a certain amount of material, the larger University and Polyclinic clinics would probably suffer the greatest loss and the smaller and independent clinics not co-operating in this work would derive the benefit. I have discussed this subject with Miss Felton of the Associated Charities, and it is far more difficult to adjust than most of you realize. I hope, however, that it is capable of solution and that some time we will be able to get together and do so. I think that this general and perhaps loose discussion of what we have heard to-night will emphasize that what we need is absolute union and that if we all stand together, we can correct these defects in our medical institutions, not alone for our own interests, but so that the public will get a squarer deal. This they surely will appreciate.

Dr. George B. Somers: We have wandered a little from the subject of hospitals and in order to bring the attention of the society back to the hospital question I wish to make an announcement taking it upon myself as chairman of the building committee of the Board of Health. As the society seems to be generally interested in the subject of hospitals this committee would like to invite the attention and interest of the society to the present San Francisco hospital which is rapidly approaching completion; there will be a public meting at the rooms of the Board of Health on April 26th, to which we invite all members of the profession who are interested, the idea being that we would like the advice and assistance of each and every professional man to help us solve a number of questions and problems that have arisen in regard to the fitting out of this new hospital. For instance, the matter of flooring to be adopted in the hospital has been bothering Dr. Brodrick and myself. We have not been able to find a consensus of opinion as to what forms the proper flooring for a hospital and I am sure that these are subjects in which the profession will be interested. Dr. Dorr is expert not only on floors but many other subjects and we hope to have him there. The meeting will be at eight o'clock on the evening of April 26th, in the rooms of the Board of Health and we hope that as many of you as can find it convenient will be present.

Dr. Wm. R. Dorr: I think the keynote of the whole situation was struck by Dr. Bine when he said for us to get together and work and if all the profession will work for the same thing they will get it. It has been the experience of a good many people in the past that the County Medical Society will get together and talk and talk over a thing and there it ends. In order to accomplish anything along the many different lines brought up to-night we will have to get together and do something.

SOCIETY REPORTS

RIVERSIDE COUNTY.

The regular monthly meeting of the Riverside County Medical Society was held at the Country Club last evening, Dr. J. M. Colburn acting as host.

Resolutions outlined in the minutes of the State Medical Society meeting, requiring consideration by County Societies, were read and discussed. It was unanimously voted to change the days of meeting of the State Medical Society from Tuesday, Wednesday and Thursday, to Thursday, Friday and Saturday, in compliance to the resolution offered to that effect.

Dr. Brem of Los Angeles presented a paper on the subject of "The Treatment of Tetanus."

The next meeting of the Society, at which the wives of the members are guests, will be held at the Victoria Club House. It was voted to dispense with the usual medical program and substitute a musical and medical high jinks instead.

GEORGE E. TUCKER, Secretary.

CALIFORNIA ACADEMY OF MEDICINE.

The California Academy of Medicine held a regular meeting on April 22nd, 1912, at which the following scientific program was given:

1. A Case of Acromegaly with Thrombosis and Embolism (with demonstration of specimens). Dr. W. B. Coffey and Dr. W. T. Cummins.

2. A Typhoid-Carrier on Shipboard. Dr. W. A. Sawyer. Discussed by Dr. F. P. Gay, Dr. G. E. Ebright, Dr. S. J. Hunkin, Dr. W. T. Cummins, Dr. H. P. Hill, Dr. W. A. Sawyer.

Refreshments were served at the close of the program.

"A State Organization for the Consideration of Public and Personal Hygiene."

Doctor A. W. Hoisholt, Stockton, Calif.—I must begin by saying I am unprepared to open this discussion—I had thought that I was not to take part in it at all. This subject has lately been taken up in the east and has received a great deal of encouragement. At New Haven, Conn., a National Society for Mental Hygiene was organized by Clifford W. Beers, author of the book "A Mind that Found Itself." The aims of this society are to

further the care of the inmates in institutions for insane; to look after the interests of individuals alleged to be insane before their admission and especially to assist recovered patients after they have been sent into the world to make a living for themselves. The field that should be covered is immense but a great deal can be done. The study of mental diseases is not on a par with that of other branches of medicine and this is especially so in our own state. The method of care of the acutely ill in mental diseases should be improved. Doctor Moore of Los Angeles, who began the movement in this state, took up this matter last year at the state medical meeting and with a few other physicians tried to effect an organization. It is now again brought to the notice of the Society and we are hoping that something will be accomplished. The field to be covered by work of this kind is great and it will take some time to arrange for the work. I will leave it for Dr. Moore to enlarge upon the aims and objects of the proposed society.

Dr. Ross Moore, Los Angeles: We have heard a great deal this morning about the conservation of the physical man and nothing at all about the intellect of man. This subject has in mind simply the question of the conservation of the ultimate personality in a man. He must not have tuberculosis to be sure—he need not have scarlet fever, etc., but if he has tuberculosis and he has his mind he is still potentially a man. If he has typhoid or scarlet fever he gets over it and becomes a man again. We want a state association which will study mental hygiene in its broadest sense. We want to stimulate the study of the ultimate personality of man. We want to discover the things which make men go insane and the things which are the causes of idiocy, epilepsy, etc. If we can get a state organization to study this question of mental hygiene we can make it clear to all, including the laity, and prevention of nervous and mental disease will be possible in California. In a number of states in the east there is already organized a society for mental hygiene having behind it a great many of the best men in the medical profession and also laymen taking up the question of insane-hospital management and after-care of patients coming out of the asylums and the collection of knowledge with reference to the causes of insanity and neurasthenia. We want to do our part in California along these lines.

Dr. J. H. Parkinson, Sacramento: I have felt for a long time and, when these questions have come before the Society, have spoken upon the needs of a better understanding of the mental phase of the question. There is need, first, of the education of the public in its view of the insane and second, of a marked improvement in the management and conduct of our state hospitals. The ignorance and inhumanity of people in general towards the insane is remarkable. More care and more respect is shown for the dead body than for the living insane person. The way husbands, wives and children are hustled out of homes and sent to asylums in the hands of the sheriff is marvelous. For many years no female attendant was provided and often an afflicted wife or daughter was consigned alone to the custody of the officers of the law for a journey of 24 or 36 hours. We have provided liberally for the care of the insane yet I do not think there is an institution in this state which is at all up to the ideal standard. The administration is not perfect by any means, the facilities are inadequate and the lack of funds is also very obvious. These are the conditions that are confronting California to-day. California, in proportion to population, has to deal with more of this class of cases than any other state. This is a very worthy subject and one in which the general practitioner needs to be interested.

Mr. Evans, ex-Mayor of Riverside: I have been interested in health matters for a reasonable number of years past. The public in general and the laymen do not know about the existing conditions. I know of some of the prejudices which exist with the different organizations and I never realized the important work a body of men like you can do and the absolute helplessness without your help, until I got into public work myself and was thrown in contact with the health department. I want to say that if the medical profession would interest a reasonable proportion of the business men more practical work would be accomplished and more definite work could be obtained than by legislation. You should talk to the laity about the necessity of these things—you should show them the conditions existing and you could interest a very large number of business men actively in the furtherance of these things. I had the opportunity to show a number of these men some of these conditions and I think we have as active and efficient work done there as any place could have and it appalled some of our business men to see these things. Their attention had never been called to them. Men nowadays are interested in seeing better conditions among all classes and conditions of people. If you will just interest the people it will do more than legislation. While we talk about the conservation of our forests, there is nothing so important as the conservation of our people and children.

NEWS NOTES FROM NEWSPAPERS.

Pomona is to have a new hospital. Dr. E. E Kelly, formerly of San Francisco, is the president of the corporation which will erect and own it.

Sebastopol will soon have a new hospital located in a building recently erected by Dr. Keating.

Hanford is to have a new fire-proof hospital which will accommodate some 45 patients; Dr. C. T. Rosson is interested in its promotion.

The First Aid car of the American Red Cross has recently been demonstrated about the state. In many places the Boy Scouts were given valuable demonstrations.

A home for incurables under the management of the King's Daughters is being erected in Oakland. The cornerstone was laid May 12th.

Cutting down the compensation of the county's physicians in Alameda county has been vigorously protested against by Dr. H. G. Thomas in a minority report of the Tax Association. The Association report suggested employing a physician who owned an automobile, at the enormous sum of $150.00 per month and requiring that he give all his time and use his automobile. Quite generous!

The State Homeopathic Medical Society held its annual meeting in Sacramento May 22nd, 23rd and 24th.

Honolulu has been practically freed from the pest of the dangerous daylight mosquitoes at a cost of $100,000, which was some $32,000 less than had been expected.

Dr. E. W. King, for many years head of the State Insane Asylum at Ukiah, has retired.

The San Diego County Medical Society is making an effort to show the County Supervisors that the County Hospital could be operated to much better advantage by a committee of the Society. It is a good move and should be successful.

San Joaquin County Health Officer, Dr. Friedberger, has been made superintendent of the County Hospital and Dr. R. B. Knight has been appointed County Health Officer.

San Luis Obispo schools were inspected (and the pupils also) in the latter part of May by Dr. Hoag, who has made a special study of this work for some years past.

Pasadena is to have a trained nurse to visit and look after the sick poor under the direction of the Associated Charities.

The Southern California Medical Society had its regular semi-annual meeting on May 2nd, at Pasadena.

Riverside, according to Health Officer Griffith, has a sewage disposal tank system that has worked admirably since 1909, disposing daily of 90 miners' inches.

San Mateo is at last to have the addition to its Red Cross hospital promised by Mrs. Whitelaw Reid. It is to be fire proof, will accommodate 50 patients and will cost about $90,000.

Dr. E. S. Josephi, for 25 years Dean of the University of Oregon medical school, has resigned and Kenneth A. J. McKenzie has been appointed in his place.

The Northern California Medical Society will hold its next meeting at Colfax on the second Tuesday in June. An excellent program has been arranged. Visitors will be cordially welcomed. The president is Dr. R. A. Peers, Colfax, and the secretary Dr. J. W. James, Sacramento.

Chico reports the smallpox situation well in hand and no further trouble is anticipated.

Sanitary districts, under the charge of paid sanitary officers devoting all of their time to the work, was advocated by Dr. Stanley P. Black at a meeting of the Los Angeles County Health Officers' Association in Pasadena May 1st.

Los Angeles, in its school inspection work, started quite a nice little row. It was claimed by certain "leaguers" that the examinations were improper. It has now been officially announced that such a charge had no foundation in fact.

The Sacramento Bee says that Senator Works has committed a gross libel on the medical profession in his remarks in the senate, and furthermore, that he does not represent public opinion in California. It says "Opposition to the establishment of a Department of Public Health comes in the main from quacks and charlatans of all kinds. . . ." Good for the Bee; keep it up.

Sacramento has yawned, stretched itself, rubbed its eyes and awakened to the fact that it has way outgrown itself; therefore it is forced to consider a new county hospital. The site of the present hospital was "out in the country" when it was built but now it is needed for town lots.

The Pasadena News is printing, occasionally, excellent editorials on public health matters. Recently it took a nice little fall out of Senator Works.

The Lane Medical Library building is rapidly approaching completion. It will house one of the best medical libraries in this country and will undoubtedly be of great value to the physicians of San Francisco.

A dealer in Stockholm has an ingenious plea for his codliver oil. He claims that irritation or fear makes an unhealthy animal, so he keeps his fish in pens and says "My cods live a tranquil life and have healthy livers."

An advertiser writes: "I wish to thank you for your evident interest in our work and again desire to assure you that I would sooner have one 'ad' in our own State Journal than in any two others together." That is not only pleasant to read, but it is true, and that advertiser realizes and appreciates what the Journal is trying to be for its readers and to do for its advertisers.

Wanted, for the City of Boston, a Health Commissioner who is worth at least $5,000 a year. The mayor will consider applications from physicians, sanitary engineers or other persons experienced in this field who are American citizens. Residence immaterial. There is a mighty good opening for the right man. Address Hon. John F. Fitzgerald, Mayor, Boston, Mass.

Los Angeles has voted $125 monthly to aid in maintaining a new Resthaven Home for the treatment of neurasthenic women. It is under the management of the Psycopathic Parole Society.

In San Diego, one H. J. Pierson was preaching to 100 persons on divine healing by the laying on of hands, when he sank to the floor and died without a groan. There must have been something wrong with the theory somewhere. This ought to be reported to Senator Works.

Pellagra developed in a woman patient in the Napa State Hospital. It is not yet known whether the disease originated in this state or not.

Los Angeles births, during 1911, exceeded the deaths by 861.

Bubonic plague has broken out at Caracas, Venezuela, and it is not yet known whether it will reach serious proportions.

Rabies seems to be steadily on the increase, not only in the number of animal and human infections, but also in distribution. This makes it quite evident that we should have no public health laws or regulations.

Berkeley has started an active campaign against flies and the police have been instructed to see that the health ordinances relating to this disease-carrier shall be enforced rigidly.

In San Jose a man who was supposed to be trying to commit suicide suddenly rose up and swatted the attending physician a most ungentlemanly swat. It was later found that he was merely drunk.

Bakersfield citizens got tired of being fed pulverized bugs as medicine, so they had "Dr." Loo Chung arrested. Whether he will be convicted or not is another matter, for the dear public certainly loves to be bamboozled. And besides, everybody should be allowed to practice medicine, according to our distinguished Senator Works.

Dr. "Jo" Mathews, of Louisville, Ky., has been delivering some lectures on public health matters in the southern part of the state.

San Francisco is to have a food and drug laboratory of the Federal Government that will be of sufficient size and equipment to care for the rapidly growing work that will come to it through greatly increased imports.

Santa Rosa probably holds the record for queer places where appendectomies have been performed, for a newspaper dispatch reads that one was performed in a barroom in Santa Rosa in the latter part of April. The patient, it is to be hoped, was in good spirits.

Stockton had a grand clean-up day in April. There were many scrap fires and it is said that everything that could be whitewashed got its proper dose.

The International Congress on Hygiene and Demography will meet in the United States for the first time since 1852. The meeting will be held in Washington in September.

Tuberculosis in California is being studied very carefully by the State Commission, of which Dr. Geo. H. Kress, of Los Angeles, is president. The commission has been increased by fifty additional citizens.

Fresno is in great danger of becoming too healthy, according to the Fresno Herald, which quotes Dr. Aiken as saying that there are no contagious diseases, except for a few cases of measles, in the city.

Stockton suffered the loss by fire of its Red Cross Tuberculosis Hospital, in May, but plans have already been made for the erection of another.

The Arizona State Medical Association held its annual meeting May 6th and 7th.

Talks for boys on sex hygiene were given by the Pasadena Y. M. C. A. during the early part of May. A good suggestion to other cities.

Yuba County is to have a new county physician as Dr. T. P. Peery, who held the office for many years, has declined to be reappointed.

Exchanging programs between county medical societies seems to be working out well. Alameda and San Francisco have exchanged programs several times with great success. Riverside and San Bernardino are doing the same thing and it is also an attractive feature there. Anything that tends to cultivate friendly relations between physicians is much to be desired.

San Bernardino has organized a Physicians' Club and at its first session had an interesting program on Brain Tumors.

Yolo County Medical Society met at Woodland, at the office of Dr. Lawhead, April 9th.

The Los Angeles Medical Association building has been projected and seems on the road to successful erection. It is to be a twelve-story, class A building, owned exclusively by physicians, and mostly by members of the Los Angeles County Association. Los Angeles certainly can show most of the rest of us that the way to do anything is not to talk about it but just to get out and do it!

Placer County Hospital was totally destroyed by fire on March 20. The work of rebuilding will begin at once.

Articles of incorporation were filed wtih the Secretary of State by the California Anti-Compulsory Vaccination League of Berkeley. "Dr." Nellie Beigle is one of the incorporators.

State Forester Homans has issued a bulletin advising the culture of medicinal plants in California commercially. The annual importation into the United States amounts to $18,000,000.

The Alameda County Society for the Study and Prevention of Tuberculosis, at its March meeting, made active preparations for an extended campaign of education. It was decided to engage an expert to act as educator and to devise means to extend the field of activity of the Society.

In San Bernardino a Physicians' Club has been organized. Bi-monthly meetings will be held. Experts will be secured occasionally to present addresses upon special topics. There were sixteen physicians present at the inaugural banquet. Dr. G. R. Owen is president, and Dr. Thomas McHugh, secretary.

The committee for the study of the "Red Plague," of the Commonwealth Club of California held its preliminary meeting. The chairman, Mr. C. M. Wollenberg, appointed sub-committees to deal with the various phases of the subject.

The San Francisco Board of Supervisors has passed an ordinance requiring all dogs to be muzzled in order to suppress the epidemic of rabies which has made its appearance in that city. Pasteur treatment is provided free.

The sailor on board the coasting vessel "Acme" who has been acting as a typhoid carrier has been investigated by Dr. A. W. Sawyer, Director of the State Hygienic Laboratory. A full report will be published shortly.

Dr. J. J. Arberry, who was sentenced, in 1910, for obtaining money under false pretenses, has been pardoned by the Governor.

A series of conferences between the Alameda County Tax Association and the Board of Supervisors is being held to devise a plan which will reduce the expense to the county in handling the patients now admitted to the Receiving Hospital.

The forty-fourth anniversary of the founding of the Sacramento Society for Medical Improvement was celebrated last month. Dr. F. P. Tay, of the University of California, was the principal speaker.

The California Federation of Women's Clubs will investigate the matter of the prevention of infant mortality, and the prevention of marriage between diseased persons, in the attempt to influence legislation along these lines.

Ground has been broken in Bakersfield for a new hospital to be conducted by the Sisters of Mercy. The structure will cost $75,000.

The Medical Department of the University of California is in process of complete reorganization. The entire clinical staff handed their resignations to President Wheeler who has, up to date, made the following appointments: Dr. Herbert C. Moffitt, Professor of Medicine and Dean; Dr. Wallace I. Terry, Professor of Surgery; Dr. W. W. Kerr, Clinical Professor of Medicine; Dr. W. B. Lewitt, Clinical Professor of Pediatrics, and Dr. Howard Morrow, Clinical Professor of Dermatology. The departmental heads will devote a large share of their time to teaching, and will be provided with a sufficient staff of paid assistants to place the school on a true academic basis. Private contributions are expected for the erection of an adequate teaching hospital.

NURSES' ASSOCIATION.

The Ninth Annual Convention of the California State Nurses' Association will take place June 24th and 25th, 1912. Sessions held at Cooper Medical College, Clay and Webster Sts., San Francisco.

TESTIMONIAL TO DR. H. BERT ELLIS.

A number of physicians of Los Angeles gave a Testimonial Dinner to Dr. Ellis at the University Club, Los Angeles, April 22nd, 1912. It was given in remembrance of the Los Angeles meeting of the A. M. A., at which time he was Chairman of the Committee on Arrangements and arranged everything to everybody's satisfaction—a most difficult task. Dr. Norman Bridge was toastmaster and, from the newspaper accounts, it must have been a most successful affair.

RESEARCH EXPEDITION.

The first research expedition (for the study of malaria) from the Department of Tropical Medicine and Hygiene of Tulane University, which department is under the direction of Professor Creighton Wellman, sailed from New Orleans, April 20, for Central America. The expedition is headed by Dr. Charles Cassedy Bass of the Department of Tropical Medicine and Hygiene of Tulane. From Central America the members of the commission will sail directly for New York to attend the meeting of the American Medical Association before which it is intended to announce and exhibit the results of the investigation.

ATTENDANCE AT THE ANNUAL MEETINGS.

As a matter of some possible interest, we publish the following figures giving the number of members registered at the several annual meetings since 1906. The exact number registered up to Tuesday night, 1906 session, is not known, but it exceeded 400. It is probable that there are always some members at the meetings who fail to register.

1906, San Francisco	400
1907, Del Monte	157
1908, Coronado	187
1909, San Jose	318
1910, Sacramento	287
1911, Santa Barbara	168
1912, Del Monte	244

OUR EXHIBITS AND EXHIBITORS.

The experiment of having a special space for exhibitors in connection with the annual meeting of the State Society, seems to have been quite a success. Of course such an exhibit is in no way new in itself; it is only new with us. It was in charge of Dr. Bering, Chairman of the Advertising Committee of the State Society, and he reports that without exception the exhibitors at Del Monte were more than pleased. Judging from the letters we have received this report is quite within the

truth. Advertising not only pays the publication that contains it, but it pays the manufacturer or the man who has some straight, honest thing to dispose of—and it pays the man who reads or sees the advertising; he keeps up to date. We are always glad to help the decent, straight sort just as we are to tell the truth about the other sort.

THE BARLOW SANATORIUM.

The Directors and Advisory Board of the above institution gave a Charity Ball Benefit on April 10th, from which it realized net receipts of $47,585.10, $34,125 of which was given toward the Endowment Fund, which shows the total endowment of our institution $101,000. The institution will immediately open ten more beds which have been closed for two years, making the capacity of the Sanatorium forty beds.

This institution is for the worthy poor cases of tuberculosis, residents of Los Angeles county, and the only charge made for any patient is five ($5.00) dollars a week.

THE VALUE OF A "PATENT MEDICINE."

"Syrup of Figs" Goes to Wheeling Syndicate.

The Neuralgyline Company, of Wheeling, W. Va., which controls the Sterling Remedy Company, makers of "Cascarets," has taken over the California Fig Syrup Company, of San Francisco and Louisville, at a price which is stated to be in excess of two million dollars. This places in the hands of the Wheeling concern two of the best known proprietary remedies in the country. It is stated that the California Fig Syrup Company has spent upwards of $6,000,000, chiefly in newspaper advertising, and that its sales during the twenty-six years of its existence aggregate more than $40,000,000.—Printers' Ink.

ARMY MEDICAL CORPS EXAMINATION.

The Surgeon-General of the Army announces that preliminary examinations for the appointment of first lieutenants in the Army Medical Corps will be held on July 15, 1912, and September 3, 1912, at points to be hereafter designated.

Full information concerning these examainations can be procured upon application to the "Surgeon-General, U. S. Army, Washington, D. C." The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training, after graduation. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

The examination in subjects of general education (mathematics, geography, history, general literature, and Latin) may be omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School.

In order to perfect all necessary arrangements for the examination, applications must be complete and in possession of the Adjutant-General at least three weeks before the date of examination. Early attention is therefore enjoined upon all intending applicants. There are at present sixty-eight vacancies in the Medical Corps of the Army.

PROFESSOR LONG.

To the Editor of the State Journal: On page 178 of the May issue of your Journal you ask what Professor Long has ever accomplished in the warfare against the manufacture of adulterated and impure foods or against the dishonest drug maker. In reply I would remind you that Professor Long has been a member of the Council on Pharmacy and Chemistry since its organization seven years ago. As a member of the Council's committee on chemistry he has not only greatly aided the work of the Council by his advice, particularly on subjects pertaining to medicinal foods and to questions of physiological chemistry in general, but has done a very large amount of chemical work for the Council. He has done this work without receiving any remuneration whatever. In recognition of these services his associates on the Council recently nominated him, and the board of trustees of the A. M. A. appointed him, to serve another term of five years. But further than this Professor Long has done a large amount of scientific work which is of the greatest value to those who are engaged in the prosecution of the adulterators of foods and medicines. As an illustration of the effect of the scientific work which Professor Long has done, it might be stated that by his authoritative investigations on casein the A. M. A. Chemical Laboratory was materially aided in its examination of the casein preparations, Iodo-nucleoid (Jour. A. M. A., July 22, 1911, p. 309) and Sanatogen (Jour. A. M. A., April 20, 1912, p. 1216).

Respectfully,

W.. A. PUCKNER.

(Note. It is a pleasure to know that Prof. Long has done such good work for the advancement of purity and honesty in foods and drugs, but it is still to be regretted that he should have been a member of the Remsen Board.—Ed.).

BOOK REVIEWS

Statische Gelenkerkrankungen. By Dr. Georg Preiser (Hamburg). Paper pp. 278, Stuttgart, 1911. Ferd. Enke, publisher. Price 10 marks ($2.50).

In this thorough study Preiser defends with convincing argument his theory of the static origin of deforming arthritis and brings it forcibly home to us that we cannot disturb stresses and strains in one bone or joint without influencing the equipoise of the skeleton as a whole. Preiser considers deforming arthritis to be the result of a reaction of the joint tissues which, set up by incongruities of the weight-bearing surfaces, is due primarily to changes in the statics of the joints. When we consider the many examples he adduces to prove his theory, such as deforming arthritis of the hip after contralateral fracture of the leg with shortening, or again after pelvic deformity, his theory appears most plausible. Besides the histories and descriptions of pathological specimens bearing directly on this theme, the book contains a mass of material of interest and importance to the orthopedic surgeon. We mention, in passing, the investigations on Roser-Nelaton's line. Preiser shows that this line and the common acceptance of the position of the acetabulum (as lying with its center midway between the superior iliac spine and the tuber ossis ischii) are inaccurate in 60 to 70 per cent. of all cases. The statement that nothing is to be found in the literature on abnormal mobility of the sacro-iliac joint makes it evident that Preiser does not know the writings of Goldthwaite and other American authors on this subject. There are several misprints in the numbering of the plates which should be corrected in subsequent editions. The book is a good one; it merits careful study; it is abundantly illustrated by good X-ray plates.

L. E.

The Surgical Clinics. John B. Murphy, M. D., at Mercy Hospital, Chicago. Published by W. B. Saunders Company, Philadelphia and London.

Vol. I, No. 2, contains: Ununited Fractures of the Tibia (Transplantation of Bone), page 135; Charcot's Ankle Joint, 151; Ununited Fracture of the Neck of the Femur, 165; Arthritis of the Knee-Joint, 177; Pelvic Tumor, 181; Ununited Fracture of the Humerus (Transplantation of Bone), 193; Lengthening of the Tendo Achillis, 203; Inoperable Sarcoma of the Face; Salvarsan, 209; Cutaneous Syphilis; Salvarsan, 211; Gastric Ulcer; Secondary Operation, 213; Ankylosis of the Knee—Arthroplasty, 221; Volkmann's Contracture, 231; Ankylosis of the Hip—Arthroplasty, 243; Prolapsus Recti, 257; Exploratory Laparotomy, Appendectomy, Megaduodenum, 261; Plastic Operation on the Face, 269; Cyst in the Left Iliac Fossa, 273; Trauma of Cystadenoma of the Breast, 281; Anastomosis of the External Popliteal Nerve, 285.

Surgical Operations. By Prof. F. Pels-Leusden. Translated by F. E. Gardner, M. D. Pages 726, 4to, linen. Published by Rebman & Co., New York. Price $7.00.

The publishers should be encouraged in their efforts to make accessible to the English-speaking medical profession much of the best in modern German literature. The volume before us is from the pen of the chief of the surgical dispensary of the Charité Hospital in Berlin, a pupil of König's, who has grown up in the traditions of the school of v. Langenbeck and v. Bergmann. He presents a good exposition of the classical operative procedures, and makes his book especially valuable to the student by the detailed consideration of the simpler maneuvers, such as, for instance, catheterization. Abundant and clear diagrammatic drawings elucidate the text.

If any fault might be found with the work it is that of ultra-conservativism. The author makes no mention of many of the newer procedures whose place in surgery seems to be established with reasonable security, and clings to older methods which are not always in accord with modern teachings. Grossich's sterilization of the skin with tincture of iodine, for example, surely is worthy of mention, and the statement that "It is by no means indispensable to remove the whole tonsil—it is enough to take a large slice from the surface and thus to open widely the crypts of the depth," will scarcely pass unchallenged.

The English of the translation is most crabbed. Sentences like "carry out quick the contemplated intervention" and terms like "indwelling catheter" (for retention-catheter) might better be avoided.

The book is well printed on good paper. It makes a good text-book; its value to the practitioner would be considerably enhanced by sufficient references to the literature. L. E.

Tumors of the Jaws. By Charles L. Scudder, M. D., Surgeon to the Massachusetts General Hospital. Octavo of 391 pages, with 353 illustrations, 6 in colors. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, $6.00 net; half morocco, $7.50 net.

A study based on the material of the Massachusetts General Hospital. Pathology, diagnosis and symptomatology are fully discussed, treatment and operative technic rather scantily. The question of the application of prostheses after resection of the jaws deserves fuller consideration; an expression of personal opinion and experience by the author would have been of interest in this connection. Claude Martin of Lyons, the first to advocate the use of the immediate prosthesis after resection of the mandible, is twice incorrectly cited as O. Martin.

The book will interest the dental surgeon; its splendid illustrations will make it valuable as an atlas and as an aid to clinical instruction. L. E.

Operative Obstetrics, Including the Surgery of the Newborn. By Edward P. Davis, A. M., M. D. W. B. Saunders Company, 1911. Pages 483.

This volume fills a long-felt want in the American obstetrical literature. It places obstetrics where it rightly belongs, and that is in the department of surgery. If this can be impressed upon the profession, it will do much toward elevating the standards of obstetrics. The author clearly shows that the more difficult operations are quite as serious as most operations in abdominal surgery, and a full surgical training is absolutely necessary before undertaking to perform them. There is much in this volume that is original in spite of the fact that there are no new important contributions. The author tells what the authorities at the head of European clinics are doing and what he himself does in his practice. The reviewer was pleased to see the author state the following: "The head must have engaged in the pelvic brim and molded itself in the pelvic brim before the use of forceps is justifiable. With other obstetrical operations so successful as are now pubiotomy and Cesarean section, unless the child is to be deliberately sacrificed, the forceps should not be applied to the head until engagement and molding have occurred. If it is proposed to sacrifice the child, craniotomy is safer for the mother than difficult forceps extraction, the head not engaged." It certainly was a pleasure to review this work. The paper is of the best quality; the print is of good size; the illustrations are numerous (249 of them), for the most part reproduced from the works of the most recent writers. Each subject, whether it comes under the head of surgery, of pregnancy, of labor, of the puerperal period, or of the newborn, is tersely dealt with and a concise statement of the methods of operating is given. The bibliographies at the end of each subject furnish a good key for those who wish to consult the literature.

L. I. BREITSTEIN, M. D.

CHANGES OF ADDRESS.

Shannon, J. W., from 1330 D St., San Diego, to 1313 D St., San Diego.

Evans, C. W., from 2000 1st St., Los Angeles, to 104 S. Cummins St., L. A.

Baker, M. D., from Porter Bldg., San Jose, to Theatre Bldg., San Jose.

Butler, Jos., from 760 Market St., S. F., to 1301 Castro St., S. F.

Hunt, R. H., from S. F. to Bartlett Springs, Lake Co., Cal.

Brandon, A. R., from 1320 E. 14th St., Oakland, to Fruitvale Ave. and County Road, Fruitvale, Cal.

Saunders, B. A., from Sutter Hotel, S. F., to Court Hotel, S. F.

Muller, A. C., from 214 Haight St., S. F., to Cambria, Cal.

Cavanagh, S. P., from Point Reyes, Cal., to Arroyo Grande, San Luis Obispo Co., Cal.

Sexton, Chas L., from 105 E. 1st, Los Angeles, to 430 So. Broadway, L. A.

Sassella, B., from Temple Blk., Los Angeles, to Italy.

Johnson, Milbank, from Wright & Callender Bldg., Los Angeles, to Trust and Sav. Bldg., L. A.

Morong, F. L., from addresses unk., to Honolulu, H. I.

Wise, K. D., from 107½ N. Spring St., Los Angeles, to 125½ So. Main St., L. A.

Tyler, Leatha Ruth, from S. F. to Talmage, Cal.

Gallup, Howard, from San Jose to Cambria, Cal.

Jamison, J. T., from addresses unk. to Colusa, Cal.

Hyde, O. C., from Oakland to Lincoln, Cal.

Jones, E. B., from Orville to Los Angeles.

Bryan, E. H., from Eureka to San Diego.

Brinckerhoff, G. Erwin, from Delger Bldg., Los Angeles, to Delger Bldg., Oakland, Cal.

Magee, I. L., from Ocean Park to Taft, Cal.

Milliken, Wm. P., from 3828 Howe St., Oakland, to 496 20th St., Oakland.

McLaren, J. L., from H. W. Hellman Bldg., Los Angeles, Cal., to Title Ins. Bldg., L. A.

Coley, H. C., from Stonyford to Chico, Cal.

Dodge, C. W., from Arbuckle to ——?

Gibbons, C. H., from College Cy. to ——?

Meredith, Jesse T., from College Cy. to ——?

Seymour, Eleanor, from Berkeley to 1329 So. Grand Ave., Los Angeles.

Otis, L. J., from Artesia to Main St., Norwalk, Cal.

Stirling, M. F., from Ukiah to Grass Valley, Cal.

Maisch, A. F., from Exchange Bldg., Los Angeles, to Auditorium Bldg., L. A.

Brown, Lura J., from addresses unk. to Laughlin Bldg., Los Angeles (she is now Lura J. Brown Hall).

Legris, Jno. H., from Oakland to 3573 16th St., S. F.

Walcott, A. M., from Ancon, Canal Zone, to Madera-Mainora Ry., Brazil.

Condory, V., from Bakersfield to Pomona.

Craig, M. A., from Oakland to Lakeport, Cal.

Eastman, M. E., from Santa Barbara to Alturas, Cal.

Blackledge, L. N., from Orosi to Wood Lake, Cal.

Sewall, E. C., from S. F. to Silver City, New Mexico.

Rigdon, R. L., from Chronicle Bldg. to 291 Geary St., S. F.

McMullin, Smith, from Petaluma to 2610 Hillegass Ave., Berkeley.

King, Edw. Warren, from Talmage to 3439 Sacramento St., S. F.

Armstrong, G. C., from San Bernardino to 1506 W. 48th St., Los Angeles.

Sweet, Anna E., from addresses unk. to 925 Market St., S. F.

Holcombe, A. J., from 701½ S. Broadway to 231 W. Pico St., Los Angeles, Cal.

Leavitt, F. J., from addresses unk. to 446 Western Ave., Los Angeles.

Edwards, S. G., from Los Angeles to 103 S. Rowan Bldg., San Diego.

Earle, Chas. H., from 940 Grattan St., Los Angeles, to Auditorium Bldg., L. A.

Norton, Frank L., from 24th Vermont Ave., Los Angeles, to O. T. Johnson Bldg., Los Angeles.

Conway-Connet, Jessie B., 221 Mercantile Place, Los Angeles.

Dozier, Earnest, from S. F. to Hilt, Siskiyou Co.

Hicks, W. T., from addresses unk. to Elk, Mendocino Co.

Wiley, E. H., from Mexico to Lissner Bldg., Los Angeles, Cal.

Bishop, S., from S. F. to Niles, Cal.

Hubbard, B. R., from 1214½ W. 9th St., Los Angeles, to Ferguson Bldg., Los Angeles.

Hagan, Ralph, from 175 N. Spring St., Los Angeles, to Broadway Central Bank Bldg., Los Angeles.

Jacobs, Wm. R., from San Leandro to Ferguson Bldg., Los Angeles.

Adams, A. L., from Ione to 2321 Russell St., Berkeley.

NEW MEMBERS.

Sawyer, W. P., Nevada City, Cal.
Hyde, C. E., San Francisco.
Best, E. J., San Francisco.
Morgan, N. D., San Francisco.
Boardman, W. W., San Francisco.
Parker, Carl H., Pasadena, Cal.
Leavitt, Frank J., Los Angeles, Cal.
Negley, J. C., Los Angeles, Cal.
Kankel, O. W., Upland, Cal.
Folkins, F. H., Redlands, Cal.
Warren, H. C., San Mateo.

RESIGNED.

Wade, Wm. N., Jamul, Cal.

DEATHS.

Cox, Luther C., San Francisco.
Van Kirk, Harriet P., Oakland, Cal.
Freiman, H. N., Cambria, Cal.
Shumway, J. P., Los Angeles, Cal.
Grant, C. F., Cloverdale.
Von Wefelsburg, A. B., San Francisco, Cal.
Miller, Robt. A. (in Sebastopol, Cal.)

BOARD OF EXAMINERS, APRIL, 1912, SESSION.

Passed.

School of Medicine.	Date of Graduation.	Percentage.
Coll. of P. & S., Univ. So. Calif.	6, 16, 10	80.2
Cooper Med. Coll., Calif.	5, 12, 11	87.6
Cooper Med. Coll., Calif.	5, 12, 11	77.5
Univ. of Calif., Med. Dept., Calif.	5, 12, 11	86.2
Univ. of Calif., Med. Dept., Calif.	6, 1, 11	85.4
Univ. of Calif., Med. Dept., Calif.	5, 17, 10	82.4
Albany Med. Coll., N. Y.	5, 6, 02	92.5 plus 5-97.5
Cleveland Coll. Phys. & Surgs., Ohio	6, 1, 10	76.3
Coll. of P. & S., Univ. of Ill.	2, 28, 88	78.5 plus 10-88.5
Coll. of P. & S., Univ. of Ill.	4, 13, 93	75. plus 5-80. *
Coll. of P. & S., Univ. of Ill.	6, 6, 05	79.3
Coll. of P. & S., Univ. of Ill.	—, —, 08	77.4
Coll. of P. & S., Univ. of Ill.	5, 24, 04	76.2
Coll. P. & S., Columbia Univ., N. Y.	6, 14, 05	83.9
Coll. P. & S., Columbia Univ., N. Y.	6, 12, 07	78.7
Coll. P. & S., Columbia Univ., N. Y.	10, —, 96	73.6 plus 5-78.6*
Creighton Med. Coll., Nebr.	4, 30, 10	82.9
Denver & Gross Coll., Colo.	5, 19, 04	83.1
Eclectic Med. Institute, O.	5, 7, 99	81.1 plus 5-86.1
Geo. Washington Univ., Wash., D. C.	6, 5, 07	77.9
Hahnemann Med. Coll., Pa.	5, —, 94	71.6 plus 5-76.6

Hering Med. Coll. & Hosp., Ill	6, 2, 10	75. *
Indiana Univ. Sch. of Med., Ind	6, 23, 09	75.
Jefferson Med. Coll., Pa	6, —, 06	75.
Medico-Chirurgical Coll., Pa	6, 2, 06	78.6
Milwaukee Med. Coll. (Marquette Univ.), Wis	3, 13, 97	83.8 plus 5-88.8
Missouri Med. Coll., Mo. (State Univ.)	3, 4, 90	77.1 plus 10-87.1
Northwestern Med. Coll., Ill	6, 14, 11	75.
Rush Med. Coll., Ill	8, 30, 11	81.1
Rush Med. Coll., Ill	6, 14, 11	81.
Rush Med. Coll., Ill	6, 14, 11	79.4
Royal Univ. of Naples, Italy	12, 30, 03	86.4*
State Univ. of Iowa	3, 28, 00	77.4 plus 5-82.4
State Univ. of Iowa	6, 16, 08	80.9
State Univ. of Iowa	4, 3, 01	75. plus 5-80. *
Univ. of Athens, Greece	10, — 99	75. plus 5-80. *
Univ. of Colorado	6, 7, 11	82.7
Univ. of Colorado	6, —, 97	81.6 plus 5-86.6
Univ. of Denver, Med. Dept., Colo	5, 18, 91	75.6 plus 10-85.6
Univ. of Maryland	6, 1, 10	86.
Univ. of Michigan	6, 29, 11	88.
Univ. of Michigan	6, 30, 92	77.6 plus 10-87.6*
Univ. of Michigan	6, 30, 04	76.1
Univ. of Minnesota	6, 11, 08	88.7
Univ. of Minnesota	6, 1, 96	80.4 plus 5-85.4
Univ. of Nashville	4, 30, 09	81.3*
Washington Univ. (St Louis Med. Coll.), Mo	4, 29, 97	88. plus 5-93.
Failed.		
Coll. Phys. & Surgs., S. F., Cal	6, 8, 11	69.5
Amer. Med. Coll., Mo	5, 10, 98	62.7 plus 5-67.7***
Barnes Med. Coll., Mo	4, 3, 93	47.5 plus 5-52.5
Central Univ. of Ky., Hosp. Coll. Med	6, 30, 06	72.8
Coll. of P. & S., Md	3, 1, 82	49.5 plus 15-64.5*
Detroit Coll. of Med., Mich	4, 19, 94	66.3 plus 5-71.3
Keokuk Med. Coll., Coll. P. & S., Iowa	4, 28, 03	59.5
Laura Memorial Woman's Med. Coll., O	5, 7, 03	57.
Marion-Sims Coll. of Med., Mo	4, 10, 97	62.7 plus 5-67.7
Medico-Chirurgical Coll. of Phila	5, —, 95	63.1 plus 5-68.1
Royal Univ. of Naples, Italy	12, 18, 03	49. **
Starling Med. Coll., Ohio	4, 16, 03	63.8
Univ. of Louisville, Ky	6, 29, 05	65.6*
Univ. of City of N. Y	4, 7, 93	63.6 plus 5-68.6
Univ. of Oregon	4, 17, 05	67.1*
Univ. of Pennsylvania, Med. Dept	—, —, 78	62.2 plus 15-77.2
Univ. of Pennsylvania, Med. Dept	6, 18, 02	69.1 plus 5-74.1
Washington University (Med Dept.), Mo	5, 25, 05	68.6
Osteopathy—Passed.		
L. A. Coll. of Osteopathy, Cal	1, 26, 12	84.3
L. A. Coll. of Osteopathy, Cal	1, 26, 12	82.7
L. A. Coll. of Osteopathy, Cal	1, 26, 12	80.5
L. A. Coll. of Osteopathy, Cal	6, 1, 11	77.3**
L. A. Coll. of Osteopathy, Cal	1, 26, 12	75.1
L. A. Coll. of Osteopathy, Cal	1, 26, 12	75.
Pac. Coll. of Osteopathy, Cal	6, 15, 11	82.4*
Pac. Coll. of Osteopathy, Cal	1, 25, 12	81.4
Pac. Coll. of Osteopathy, Cal	6, 15, 11	75. *
Osteopathy—Failed.		
L. A. Coll. of Osteopathy, Cal	6, 1, 11	72.4*
L. A. Coll. of Osteopathy, Cal	6, 1, 11	69.9*
L. A. Coll. of Osteopathy, Cal	1, 26, 11	60.8***
L. A. Coll. of Osteopathy, Cal	1, 26, 12	60.8
Pac. Coll. of Osteopathy Cal	6, 23, 10	71.5***

*Taken before.

New Licentiates—Medical Doctors.

N. L. Allen, H. S. Anderton, D. E. Arnold, S. D. Avery, H. N. Belgum, E. L. Bickford, R. E. Burns, H. L. Burrell, E. McL. Campbell, R. M. Clark, J. A. Copeland, W. W. Crawford, D. H. Currie, E. E. Dotson, Jr., A. H. Dunn, M. J. Fancher, J. M. Gardner, R. P. Giovannetti, K. R. Gompertz, T. E. Grubbs, J. A. Guilfoil, M. A. Heffelfinger, J. E. Hosmer, L. V. Howard, C. Johnson, H. W. Jones, J. W. Kean, J. Lephakis, F. E. Lettice, C. C. Long, G. A. Magnusson, E. M. Mikkelsen, E. R. Mitchell, R. B. Mixsell, C. E. Mordoff, F. E. Pagett, R. Pietrafesa, D. V. Sadicoff, O. V. Schroeter, H. C. Smith, H. Sugarman, R. G. Van Nuys, W. White, F. S. Wilcox, E. A. Woods, A. H. Zeiler, L. W. Zochert.

New Licentiates—Osteopaths.

E. R. Bussenius, U. W. Cary, A. B. Cliff, H. M. Cline, J. M. Fraizer, L. J. Lund, M. E. Pittman, J. M. Waste, J. R. Young.

New Licentiates—Honorably Discharged United States Surgeons.

Chas. H. Andrews, Univ. of Buffalo, N. Y., Feb. 28, 1888
Wm. H. Bucher, Medico-Chirurgical Coll., Phila., Penn., May, 1896.
Geo. F. Campbell, Barnes Med. Coll., Mo., 1904.
A. H. Heppner, Long Island Hosp. Coll., N. Y., 1897.
H. F. Hoyt, Columbus Med. Coll., O., Mar. 24, 1882.
Robert Smart, Med. Dept. Georgetown University, D. C., May, 1896.

California State Journal of Medicine.

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. X JULY, 1912. No. 7

EDITORIAL NOTES.

IMPORTANT NOTICES!

Last month, and in this issue, and in subsequent issues, important notices and announcements relating to affairs of the Society, will be found in the advertising pages. Our advertising space is worth money; worth a good deal of money to our advertisers; a lot of them write us nice letters telling us what they think of it; more than one has stated it to be his opinion that advertising in your JOURNAL has made his business. If it is valuable space for other people it is valuable space for the JOURNAL and for the Society and so we are going to use it for promoting our own interests as well as other people's. The office of the Society and of the JOURNAL is a *business* office; incidentally it may be said that a whole lot of business goes through the office every year and the volume is increasing tremendously. But get the point; *it's a business office.* Here the *business* side of your work is looked after; the activities of the medical men of the entire state center. If you want to keep up with the important suggestions, changes, improvements, etc., that are coming along, *look for them in the business part of your* JOURNAL; in the advertising pages. And it will pay you well for the trouble of looking.

SUGGESTIONS TO AUTHORS.

A pamphlet with this title is issued by the American Medical Association and will be sent to any one for the small sum of twenty-five cents. Every going-to-be author should provide himself with this pamphlet and read it carefully before writing his article. Many authors seem to resent the rejection of their manuscript when they really ought to apologize to the editor for sending him such slovenly or possibly illiterate work. If the following rules and suggestions were followed, fewer manuscripts would be rejected, a good article will be greatly increased in value, time will be saved, the editor will be able to keep his temper and the compositor may be saved from a drunkard's grave:

Manuscripts *must* be typewritten to receive any consideration; they *should* be well spaced between the lines and with ample margins.

A carbon copy should not be submitted; the original is none too good, as a rule, and the carbon copy shows at once that another and better copy exists. If the author desires to keep a copy, he should keep the carbon copy.

Ingenuity is praiseworthy in almost anything except spelling. Dictionaries are cheap; the author should carefully correct his manuscript before sending it in. An aimless ingenuity in variegated spelling is calculated to drive nearly any "copy reader" crazy.

Exclusive publication is the rule of nearly every journal so far as known. To send the same article to two or more journals is cheating.

Do not write at all unless you have something to say and then say it as briefly as possible and stop.

Number the pages of your manuscript consecutively from first to last, and do not put slips of odd sizes in between sheets so that they can fall out, get misplaced or in some other way give you a chance to kick at the printer for your own carelessness.

Case reports are, as a rule, maddening. They may possibly be intelligible to the author, but from the way he generally writes them up even this is to be doubted. A case report should be as carefully written as any other portion of the article; and it should contain no unnecessary matter. Do not include negative findings; what is not stated to be abnormal is assumed to be normal.

Quotations are another source of anguish. A majority of authors will put quotation marks at the beginning of the quoted matter—and then carefully forget to put them at the end!

A "case" is a condition or instance of disease; a patient is a human being. One may operate upon a patient but not upon a case; the patient dies or recovers; not the case.

Illustrations are seldom necessary to elucidate the text of a properly written article. When they are necessary, they should be in the form of black and white drawings on a stiff paper, or clear, clean photographs on a glazed paper. Each should be numbered and have the name of the author on the back.

Never roll a manuscript; send it flat or folded.

Never roll or fold photographs; send them flat.

A NEW GOLD BRICK PLANT.

Two very enterprising gentlemen have started a new "Medical College and Post Graduate School" in Los Angeles. (One's first thought is "poor Los Angeles!") The President of the institution, according to their letterhead, is Frank P. Young, a graduate of the Kentucky School of Medicine in 1893, licensed in this state in 1909, and the Secretary is C. P. Drumm, a graduate of the Pacific College of Osteopathy 1902, licensed 1907. In a letter to an unlicensed physician in San Francisco, occurs the following interesting paragraph which explains the whole game:

> "One of the objects in establishing the school is to have an institution where osteopathic physicians may enter and receive credit for the time and work they have put in at recognized osteopathic colleges. In other words, students who have had a three years' course in an osteopathic school will only be required to attend one school year at the Pacific Medical College and Post Graduate School, to receive the degree of Doctor of Medicine."

And there you are! The diploma mill working again. The law of this state would not recognize such a degree or the work done in such a school; but that information is, probably, *not* given to those who may wish to take advantage of this worthy institution. Any osteopath who accepted their proposition with the intention of applying for a license to practice medicine in this state, would simply be buncoed out of his money. Again we must say "poor Los Angeles!" for here is another one; this time it is a letter from the "Mazdaznan University, Los Angeles Section," and is signed W. H. Riley, "Food Scientist."

> "We are teaching a system of dietetics that has produced marvelous results and should like to tell you more about it, as we are positive our methods are destined to supplant all systems of medication."

CATCHING SUCKERS.

The sucker is a fish of the carp family; his diet is not elegant, to say the least; he is by means of being a sort of parasite, also. In a few of his characteristics some of our best "nostrum" makers and their friends are not unlike the sucker; and also like the sucker, they are easily caught. Just say something unpleasant about them and then scrutinize the "friends" that, of course with the purest of impersonal motives, rush to their defense and support! "Smith"' says that ergoapiol does not advertise in newspapers and that it is intended exclusively for physicians' prescriptions. On the first count they may be true though our informant was quite sure he had seen the "ad" in some lay publication. On the second count we would only call the attention of any physician who prescribes ergoapiol in the original package to the circulars therein contained. One refers to ergoapiol itself and discussing amenorrhea says: "If the flow is absent or insufficient in quantity because of constitutional disturbances, the preparation will afford relief by restoring vitality and functional activity to the entire reproductive system." The other circular refers in the highest terms to glycoheroin (Smith) in "coughs, bronchitis, phthisis, asthma, pneumonia and whooping-cough." Every original package sold may possibly help the layman (or woman) along the cemetery road of self-medication (or abortion). Yet the nostrum people and their "friends" say that the rules of the Council on Pharmacy and Chemistry are absurd. Can it be because these rules do not permit this sort of advertising to the lay public? And yet these things are intended "exclusively for physicians' prescriptions"!

TRUTH OR LIES.

Some insurance companies selling medical defense policies have written to our members telling them that medical defense by the State Society is worthless, or nearly so, and that their own attorneys were the only ones that know all about the law. As against these carefully worded, malicious, lying letters, it is not unbecoming to place the following letter from a member of the Society who was recently sued for alleged malpractice and successfully defended. The "two other attorneys" were retained by this physician before he remembered that he was entitled to defense by the State Society. For obvious reasons the names are not mentioned:

> "In commendation of the work done for me and for the Society by your representative, Mr. ———, in the case of Blank vs. Blank, I must assure you that Mr. ——— exhibited untiring energy and superior ability, and while I had employed two other attorneys, Mr. ——— was the general and did practically all the work in the court room."

Remember that this medical defense by the State Society is merely co-operative protection against blackmail; the members of the Society are helping to protect each other. No member knows when he himself may be the defendant in an action of this sort. Therefore, see that you keep your dues paid up; and, also, see that you help your fellow member. If he is sued and needs your expert testimony, give it and give it cheerfully; some day you may need him to do the same thing for you. Do not look upon the giving of expert testimony for the Society as something for which you should be paid. You are not doing it for a rich corporation but for yourself; you are helping to protect yourself against blackmail—for that is what 99 out of 100 malpractice suits really are; attempts at blackmail. A number of the suits we have successfully defended have been brought by people who wanted to get out of paying their physician. He sued for his bill and they sued for malpractice; we won the suits; the Society defended the member and won out. It is time the good old game of "bilking the doctor" was stopped, and that is just what the Society is doing; stopping it; making it possible for the physician to sue for

his just bill without being afraid of a cross-complaint in which the patient alleges malpractice. Do insurance companies do that? Ask Dr. Magee, of San Diego. Is it worth while to remember to keep your dues paid up and be at all times in good standing? Ask Dr. Mercer, of Eureka. If we just stick together and help each other, this game of "bilking the doctor" will be forgotten, in California.

THE BARANY SYMPTOM COMPLEX.

Three years ago, the name of Barany was known only to a few otologists, who were familiar with the work being done in the Politizer ear clinic. To-day every neurologist and "internist" is making himself familiar with the work of this remarkable investigator. Starting with a study of the nystagmus produced by an irritation of the vestibular apparatus of the ear, brought about by the injection of cold water into the external canal, various functions of the cerebellum have been studied, until now more is known about the kinesthetic senses, and their importance in the diagnosis of cerebellar tumors, than the entire previous decade had brought out. His latest contribution to this subject is the discovery of a symptom complex based on the tests which he has published in the twenty odd papers standing to his credit since 1906. Briefly stated, a collection of fluid in the cisterna pontis of the cerebellar pontine angle, can give rise to the following complex of symptoms, when occurring in a fully developed case on the right side. 1. Headache in the right posterior cranial fossa. 2. Tenderness in the right mastoid. 3. Attacks of dizziness. 4. Lowered caloric reaction. 5. Right sided deafness of the nervous type. 6. Right sided tinnitus. 7. With the palm downward, spontaneous "pointing-bye" sign to the right. 8. Failure of the pointing reaction to the left with an artificially produced nystagmus to the right. 9. Lowered pulse rate. 10. Decreased corneal reflex. In Barany's thirty cases, he was able to show that this circumscribed collection of fluid was brought about principally as an end result of a serous meningitis. The symptom complex can clear up spontaneously or be cured completely by operative means. This paper, presented recently at the German Otological Congress, created as profound an impression, as did his demonstration last year before the British Medical Congress, when by means of his new tests he was able to locate cerebellar tumors, which Sir Victor Horsley subsequently found at operation. In a few years, when these tests have become a part of the routine of every neurological examination, the immense value of his discoveries will be better appreciated.

H. H.

SALVARSAN AGAIN.

In these days when physicians boast of long series of patients who, at their hands, have received one, two, or three injections of 606, it is perhaps not unwise to give a very short résumé of the views of Professor Gaucher of the University of Paris. This syphilographer quotes the remarks recently made at the congress in Rome by Professor Finger of Vienna: "The 606 does not sterilize; relapses occur more frequently after its use than after mercury." This has been Gaucher's teaching for the last 18 months. Gaucher admits that salvarsan is a remarkable cicatrizing agent, healing, with a few exceptions, far more rapidly than does mercury or potassium iodid, syphilitic ulcerations, chancres, mucous patches, etc. With the exception of tertiary lesions thus cured, the above lesions almost invariably recur. It is true that the recurrences are often postponed several months, but this very period of latency adds another element of danger by giving the impression of a cure. Furthermore, the recurrences are at times quite severe. He therefore advises the use of 606 in order to produce a rapid momentary cicatrization of the chancre and mucous patches, and more especially in those cases where mercury is without action, or where it has lost its efficacy after prolonged usage, or where there is intolerance; the latter groups being naturally quite small. Gaucher urges thorough physical examination before the injection, and even then, to use it with fear and trembling, because of harm that may follow, without rhyme or reason, even a very small dose. Even the most enthusiastic Germans now admit the frequent relapses after 606, but, ascribing these occurrences to insufficient dosage, argue that it is wiser not to begin its use in any case unless, if necessity arises, it be possible to administer repeated injections with a total of even three grams of salvarsan! Certainly we in America believe that salvarsan alone is not the *therapia magna sterilisans* it was at first thought to be. With a wave of the hand he casts aside all the elaborate explanations of deaths following 606 and substitutes the words "arsenical intoxication," and even in non-fatal cases he emphasizes the danger to kidney and nervous system. He makes the statement that arseno-benzol has caused more deaths than the syphilis, if left to itself, could have produced. The so-called "neurorecidiven" he attributes to arsenical poisoning, and not to syphilis (this view being, of course, disputed by the German school and by our best American syphilographers). In view of the fact that cases of lues may remain latent for decades (he cites one case with a latent period of 47 years) he notes the difficulty of pointing to a case as cured, and does not consider a negative Wassermann reaction as evidence in such a matter. In giving this résumé of Gaucher's views, there is no intention of condemning the use of 606. It is hoped, however, that it will stimulate physicians to study their cases carefully before injecting, to select those most apt to benefit and to exclude from such treatment such cases as can be as well treated by mercury and iodid. In this state there certainly have been disastrous results in certain cases; there *must* have been some considering their frequency abroad. Let us hear of these cases and their ultimate outcome. It is only by such reports that we can properly judge the method. Surely we are not

so conceited (or untruthful) as to state that accidents with 606 occur only in Europe; that we in California never allow such things to happen.

R. B.

ON MAKING BOOKS.*

"Intemperantia litteratum laboramus," groans Seneca. "We are suffering from a plague of literature," translates Father Barry. This is a complaint we may echo in our own day. Everybody is writing or threatens to write or is chidden for not writing. But worse than that, everybody is being written about. The market is full of "Who's Who's"—literary, scientific, theatrical, religious, etc., amplifying from year to year so regularly that inclusion in them has ceased to imply distinction, while omission from them will soon come to denote overwhelming modesty or densest obscurity.

Despite Seneca's complaint that his contemporaries wrote too much, posterity feels that it has received too little. We are left in that frame of mind the production of which, the elder Mr. Weller declared, is the great art of letter-writing; we wish there were more of it. Such a void Dr. Kelly seeks by the work before us to spare "medical generations yet unborn." His object is to supply a want which he himself had felt in the course of his biographical labors.

In its compilation he has spent five years. The great value of Professor Kelly's time is a matter of common knowledge and those who are interested in medical biography owe him their gratitude for the zeal with which he has devoted himself to this avocation.

The faults of the book the compiler himself indicates in his preface. The biographies are lacking in uniformity of style and treatment, a lack for which a diversity of excellence would have compensated us. But many of the lives are uninteresting and the data supplied are trivial. It is admitted that in some instances "relatively unimportant men receive a more extended notice than their worthier compeers," but Dr. Kelly had neither time nor inclination to remedy this defect. Among the more than twelve hundred "worthies" included in the Cyclopedia many seem to us of no consequence whatever. Some of them are men "who have done no special original work but who attained great *local* prominence." It is this numerous body of prominent citizens, pointed to with pride and undiscriminating good nature by Americans, and by others pointed at with derision before and since Martin Chuzzlewit, that create the impression that everybody who does not studiously withdraw from observation is likely to be embraced in the capacious biographical literature of to-day. Presumably to his local prominence, one Philip Greth Smith (1810-1879) owes his place in this Cyclopedia; it is recorded of him that "In 1850 he purchased the rights of Lebanon County for 'Coads' Patent Graduated Galvanic Battery,' and thereafter confined his practice almost exclusively to chronic diseases." We hope we do the deceased Smith no wrong if we base upon this statement the suspicion that he was very like a quack. Of course a cyclopedia is not necessarily a roll of honor, and the presence of a name in it does not connote merit, although Dr. Kelly calls his work "a modest Hall of Fame." It is for the murder he committed and not for his scholarship, that Eugene Aram's memory is perpetuated in the encyclopedias. But there must be a limit somewhere to comprehensiveness, for too large a multitude of the unworthy and unimportant obscure our view of those worthier of our attention.

Of practitioners in California we may mention the biographical notices of Levi C. Lane, Elias Samuel Cooper and R. Beverly Cole. The life of Cooper was written by Dr. Emmet Rixford and is an excellent example of what such a sketch should be, for the deeds of the man which illustrate his spirit are most vividly recorded.

The omission of a biography of George Chismore is a defect in this work as reprehensible as many of its inclusions. He was not only "locally prominent," but his skill with the lithotrite and his improvements of that instrument were recognized throughout the nation. In his character there was an association of most attractive and endearing traits, in his career there was variety of scene, there were adventures ashore and afloat, among barbarous tribes and in the great centers of culture; his versatility was exhibited in his skill as a huntsman and in the beauty of his poetry—surely an ideal subject for a most picturesque biography, and one that should be inserted into Dr. Kelly's Cyclopedia if a new edition presents an opportunity for introducing it.

* A Cyclopedia of American Medical Biography, comprising the Lives of Eminent Deceased Physicians and Surgeons from 1610 to 1910. By Howard A. Kelly, M. D. Illustrated with Portraits, 2 vols. W. B. Saunders Company, Philadelphia and London, 1912. $10 net.

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THE PRESENT STATUS OF NITROUS OXIDE IN MAJOR SURGERY.*

By MARY BOTSFORD, M. D., San Francisco.

The purpose of this paper is to review the present status of nitrous oxide as an anesthetic in general surgery, and the arguments for and against its routine use. Its safety for short periods has been thoroughly demonstrated by the lack of fatalities following its use in hundreds of thousands of cases in dental offices by untrained administrators, with unprepared patients, and with none of the usual restoratives at hand.

The extension of its use to minor surgery, first with the addition of air, and later following the discovery of Andrews of Chicago, that oxygen prevented the asphyxial element, with oxygen, has gradually widened its application, until at the present time it is used extensively in nearly every surgical clinic throughout the country. Many surgeons are using it, with the addition of small amounts of ether, in a majority of their cases, and in the service of Dr. Crile at Lakeside Hospital, Cleveland, it is the routine anesthetic. In the words of Dr. Bevan, who does not favor its routine use: "A surgical clinic that does not find frequent use for nitrous oxide is from the standpoint of anesthesia, a badly conducted clinic." [1]

It does not seem to have met with much favor in Europe, although Dr. Hewitt of London, the leading authority on anesthesia, as early as 1901, ranked it as the safest known anesthetic when administered with a sufficient supply of oxygen to prevent asphyxial complications.[2]

Dr. Bennett of New York, whose record of 27,000 anesthesias entitles his opinion to much weight, in a personal communication stated that after two months' work in Dr. Hewitt's clinic and several hundred private cases, he concludes that the method requires so much skill for safe administration as to preclude its general adoption as a routine anesthetic.

It is being used extensively and with increasing frequency in nearly all the large surgical clinics in New York, Boston and Philadelphia. In Johns Hopkins Hospital, where the rebreathing method advocated by Gatch is used, in over three thousand administrations there have been two fatalities reported.

Dr. Bevan of Chicago, who as a member of the A. M. A. Anesthetic Commission, was among the first to encourage a revival of interest in nitrous oxide, now concludes that it does not produce either as safe or satisfactory an anesthesia as ether in major surgery, except in patients who are bad surgical risks.[3]

The most important work that has been done in investigating the value of nitrous oxide, is that of Dr. G. W. Crile, experimentally in the laboratories of the Western Reserve University, and clinically in the surgical clinic of Lakeside Hospital, Cleveland. Up to the present time nitrous oxide and oxygen, with the addition in a certain proportion of cases of small amounts of ether, has been used in his service in 3300 consecutive cases, of which 2400 have been anesthetized by Miss Hodgings. One death among the very early cases is reported, occurring six hours after operation in a patient with myocarditis and a valvular lesion, constituting an exceptionally bad risk.[4]

In this clinic nitrous oxide is given under the most favorable conditions, such as it would be almost impossible to duplicate in the average surgical clinic, or indeed in any circumstances other than the combination of a surgical team in which operator, assistants, anesthetist and nurse are a constant quantity. In addition the anoci methods of surrounding the patient with what might be called "shock absorbers," tend to increase its effectiveness. A preliminary dose of morphine 1/3 to 1/4 of a grain and scopolamin 1/200 to 1/150 of a grain is given one to two hours before operation. In abdominal sections exploration is done with moist gloves; no gauze packing is used; great care is taken not to stimulate peritoneal reflexes; and when not possible to prevent this, all manipulations are suspended until a deeper narcosis has been obtained, by the addition of a small amount of ether which is rapidly vaporized by heat in the apparatus now in use. The adequacy of this light anesthesia is further assisted by the repeated blocking of nerve impulses with injections of novocaine, in the line of the skin incision, in the peritoneum and fascia preliminary to closure, and in the stitch holes of the tension sutures.

The results of nitrous oxide given under these circumstances and by highly trained anesthetists, are naturally more favorable than when given under ordinary conditions. Dr. Crile's statistics of end results of operations give 3% fatalities of all cases and 1% of selected cases, and these results he attributes in large measure to having eliminated the factor of ether intoxication and its results.

Up to the present time it has not been found practicable to use nitrous oxide for operations in the mouth and nose requiring continuous administration. Tonsillectomies are done under it with the use of a nasal inhaler, but the method is not satisfactory for the operator who enucleates and ligates vessels, and is only suitable for operations lasting a few minutes like the Sluder method, in which case the continuous administration is not necessary. The substitution of nitrous oxide for ether in Dr. Elsberg's adaptation of the Meltzer method of intratracheal insufflation has been successfully tried in New York and Boston. This offers a field for investigation as an inspired method of anesthesia in oral surgery.

It may fairly be said that there are no contraindications to the use of nitrous oxide. On account of the liability to cyanosis and venous congestion, if the proportion of oxygen is not sufficient, there is perhaps more risk than with ether for patients with advanced myocarditis, stenosis,

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dilated right heart, aneurism, arterio-sclerosis, and in brain surgery.

The question of its safety in infants is still debatable, the rapidity of its action and the narrow plane of safety with these patients would seem to indicate danger. In the other extreme of life, old age, it is most satisfactory.

The disadvantages of nitrous oxide as compared with ether are that it produces less muscular relaxation and more venous congestion, its cost is greater, and it necessitates trained anesthetists. With the lighter degree of anesthesia and lessened muscular relaxation, intra-abdominal manipulations excite a greater reflex action. To prevent this condition from arising, or to quickly overcome it when present by the addition of a sufficient quantity of ether, is the chief difficulty in administering this anesthetic. Preliminary doses of morphine or scopolamin help largely in its prevention. The venous congestion may be prevented or reduced to a negligible degree by using a proper percentage of oxygen, an unfailing guide being found in the patient's color.

Its greater cost has been a serious objection to its use in the clinics, but this is being rapidly reduced. It can now be obtained for about one-half the cost of a few years ago, and this may be further reduced at least 50% by the installation of plants for the manufacture of the gas.

The amount of nitrous oxide used per hour varies from 60 to 300 gallons according to the needs of the patient and type of apparatus; and the amount of oxygen from 20 to 40 per cent. The necessity for trained anesthetists is being rapidly supplied, as surgeons everywhere are demanding them even for the administration of the less difficult anesthetics.

The chief advantage of nitrous oxide is its applicability in the cases where ether and chloroform are contraindicated. Patients who are impaired surgical risks, whether from anemia, shock, sepsis, renal, pulmonary or bronchial complications, can take nitrous oxide safely. It lessens the operative risk in diabetics and the most strikingly beneficial results have been obtained by many surgeons who use it exclusively in goitre operations, particularly in the exophthalmic type.

The researches of Hamburger and Ewing have shown that after ether anesthesia the blood coagulates more rapidly and hemoglobin is reduced, with consequent anemia; while nitrous oxide causes a slower coagulation and practically no change in hemoglobin.[5]

Graham has demonstrated that phagocytosis of disease germs, streptococcus, pneumococcus, staphylococcus, colon and typhoid bacillus is inhibited by ether.[6] Theoretically, then, operations in the presence of septic conditions would be safer under nitrous oxide.

It prevents or minimizes shock. In the H. K. Cushing Laboratory of Experimental Medicine, Western Reserve University, Cleveland, various experiments carried out by Dr. M. L. Menten, in association with Dr. Crile, proved that nitrous oxide owes its anesthetic qualities to its ability to prevent the use of oxygen in the circulation.[7] That the brain cells show slight changes from trauma inflicted under nitrous oxide as compared with those under ether in animals, and hence its use minimizes the importance of nerve blocking in the operative field.[8]

Quoting Dr. Crile on this subject: "On the theory that nitrous oxide owes its anesthetic property to its power of limiting oxidation in the brain tissue, and the theory that shock is due to an exhausting activity of the brain cells due to injury, one might very properly infer that the brain cells were by nitrous oxide prevented from making the harmful expenditure of energy, thus minimizing the shock."[9]

The marked decrease in post anesthetic nausea and vomiting is not the least of the advantages of nitrous oxide.

Miss Hodgings' observations of 1,000 cases showed nausea in 10% lasting only a few hours in all but three, two of which had been gall-bladder operations. These results are verified by the experience of all who have used this anesthetic.

The comfort of the patient, the early ability to take and retain nourishment, must count largely in shortening convalescence.

An experience during the past ten years of approximately 9,000 nitrous oxide administrations—at first as a preliminary to etherization, then for short operations such as opening abscesses, reduction of fractures, paracentesis, adenectomies, etc.—later with the addition of air for minor surgery, and finally combined with oxygen for major surgery, in almost every variety of operative procedure, lasting in one case over three hours; its application in many unusual cases such as intrathoracic surgery; through a trachotomy wound where respiration was impeded by constant discharge of pus from a gangrenous lung; in a cataract operation on a seventy-five-year old patient; through a nasal inhaler for an antrum operation lasting thirty-four minutes—in all of these cases without the addition of ether, the remarkable lack of after effects especially in patients who are bad surgical risks, the absence of post anesthetic discomfort to the patient, the general verdict of the operators that recovery is more rapid and complications fewer, have convinced me of the great value of nitrous oxide and its wide field of usefulness.

There have not yet been collected sufficient reports of the use of nitrous oxide in major surgery to establish its safety as compared with ether; and as the final criterion of any anesthetic is safety, its future place must depend on the collected reports of many observers.

There are two types of apparatus for the administration of gas and oxygen; one represented by the Gatch modification of the Bennett, consisting of a face mask connected with a rubber bag which is filled with nitrous oxide, oxygen added in varying proportions as indicated by the needs of the patient and the supply valve closed. The contents of the bag is then rebreathed until the necessity for a fresh supply is indicated, this period varying from a few minutes to as long as 20 min-

utes. Yandell Henderson's [10] conclusions as to the respiratory stimulation of carbon dioxide and the explanation of deaths from cardiac failure due to apnea from excessive ventilation of the lungs, justifies this method, as does also the closed gas-ether sequence of Dr. Bennett.

The other type such as the Teter and the Monovalve are constructed on the same principle except that there is a constant flow of the gases in a definite proportion and less rebreathing. The Monovalve has the advantage of a finer adjustment of pressure, the substitution of electric heating for alcohol, and the evaporation of ether by dropping on a heated surface, thus enabling the anesthetist to increase the depth of narcosis very quickly.

The objection to complicated apparatus must in this case give way to the necessity of having a mixture of gases delivered under a definite pressure through an air excluding mask. It is at best a difficult anesthetic to administer and correct apparatus is absolutely necessary.

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THE CHOICE OF AN ANESTHETIC.*

By CAROLINE B. PALMER, M. D., San Francisco.

I am somewhat painfully aware of my rashness in attempting to speak on a question which has caused such frequent controversy as the choice of anesthetics. In reading the literature, and in listening to discussions on this subject, one is unavoidably struck by the partisan spirit frequently displayed. It is sometimes more as if politics or religion were being considered than a question of therapeutics.

Fortunately in the past few years much valuable experimental work has been done, giving us something more definite as a guide than the simple opinions which are expressed with such amazing frequency. These experiments seem to have proved beyond reasonable doubt that the three most commonly used anesthetics, viz: nitrous oxide with oxygen, ether and chloroform, rank in toxicity, in immediate danger, and in dangerous after effects in the order named. That is, nitrous oxide with oxygen, properly administered, is remarkably free from danger during anesthesia, and that it causes no after effects of any significance: that ether may cause death either from failure of respiration or even primary heart failure at time of anesthesia, but that in ordinary cases the danger is slight, except when the administration is extremely faulty: that it causes slight anemia, marked decrease of coagulation time of the blood, marked decrease in phagocytic power and may be followed by lung and kidney complications, and probably in certain cases by acidosis: that chloroform is more dangerous to administer, as it occasionally proves fatal even in the hands of careful and expert anesthetists and when given under the most favorable conditions as to preparation of the patient, posture during anesthesia, etc. In Hewitt's work on anesthetics he reports, in a summary of over 1,000,000 anesthesias, immediate death from chloroform as one in 3000, and from ether as one in 16,000 administrations. It is held by the best authorities that in giving chloroform, a vapor strength of more than 2% is not justifiable, and in practice it is difficult to estimate this per cent. accurately. When an apparatus is used controlling the administration so that no more than 2% can be given, it is sometimes difficult to induce anesthesia.

The after effects are quite as numerous and more serious than those following ether. It produces hemolysis, distinct anemia, marked decrease of phagocytic power, marked decrease of coagulation time, and the condition known as late chloroform poisoning adds materially to the mortality after the use of this anesthetic.

Excluding nitrous oxide and oxygen, as that is the subject of a separate paper this evening, the choice of anesthetics from the standpoint of safety seems to be overwhelmingly in favor of ether and, as a matter of fact, ether is the routine anesthetic in most of the larger hospitals in our country. It is in small hospitals, in offices and in emergency cases that chloroform is most frequently given in the United States, and this is doubtless one of the reasons for the relatively high mortality attending its use, as, under such circumstances, the same care is not always exercised as to preparation of the patient, posture during anesthesia, and skill of administration as is becoming routine in most of our hospitals.

PREPARATION.

The question of preparation has a most important bearing upon the choice of anesthetics. If, for any reason, a patient who has not had the usual preparation must be anesthetized, the choice of anesthetic, from the standpoint of safety, should be nitrous oxide and oxygen. In case this is not available, or should greater relaxation be required, ether becomes the second choice, but in the light of statistics it would seem that no one would care to take the added risk of using chloroform under such circumstances.

POSTURE.

The posture required for a given operation is sometimes the controlling factor in the choice of anesthetic. A semi-upright posture is practically free from danger when nitrous oxide is used. It is usually not attended by any serious danger when ether is the anesthetic, but, as far as I know, all competent authorities condemn it for the administration of chloroform, and yet we still have fatalities in dental chairs from chloroform, frequently administered by graduates of medicine. The following is a quotation from an article by a dentist, published in the *American Medical Association Journal:* "The record of deaths in dental chairs

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from chloroform is so appalling that one would think no intelligent dental surgeon would permit this agent to be used in his office, even though a physician should recommend it and assume the responsibility." The implication here is rather hard on physicians, but I am afraid that we cannot consider it very unjust. Francis R. Packard reports a list of deaths from anesthesia in tonsil and adenoid operations. Of 29 deaths, 26 were attributed to chloroform, 2 to ethyl chlorid, and 1 to A. C. E. mixture. The question of posture doubtless was a factor in many of these cases. He does not mention any deaths from ether for this operation, but numbers have been reported from various sources. Quoting from an article in a recent number of the *A. M. A. Journal*—"It has been generally believed that the presence of the so-called status lymphaticus was the cause of the rather unusually large proportion of cases of death during anesthesia, which occurred in the course of operations for the removal of tonsils and adenoids. Henderson explains these deaths by saying that they are due, not to status lymphaticus, but to the acapnia which accompanies the deep respiratory efforts incidental to the intermittency in anesthesia, which often prevails in these cases, to too light anesthesia at the start and to nervousness preceding."

The choice of anesthetic for infants is still influenced to an extent by the old time opinion that chloroform is safe for children, whatever may be said of it for adults. I have searched diligently for justification for this belief but without avail. Infants take chloroform readily and that is, I believe, all that can be said in its favor. Why, when its poisonous effects upon adults, upon dogs, cats, rabbits, etc., are so freely admitted, should the human infant be thought to be immune! In my own experience I have never given chloroform to a very young child, that I have not been satisfied it would have been better under ether. This is the only subject in the whole field of anesthesia in which I plead guilty to the partisan spirit before mentioned.

ANESTHETIC SEQUENCES.

Much has been said recently for and against the various anesthetic sequences. The nitrous oxide-ether sequence has been condemned by certain authorities on the ground that the "oxygen starvation and carbon dioxide poisoning so induced cannot but be harmful." As the nitrous oxide is usually given for only about one minute preceding the ether, it is difficult to believe that there are sufficient grounds for such a statement. On a basis of 14,000 administrations in three hospitals in San Francisco, the advantages seem very great, and, in comparison with those cases in which ether alone has been used, are as follows: The induction period is reduced by about one-half: anesthesia is induced with a minimum of discomfort to the patient: the so-called stage of excitement is but little in evidence, and the amount of ether required is somewhat decreased. As the stage of excitement is admitted by all authorities to be the period of greatest danger to life from any anesthetic, this alone would seem to be sufficient reason for the routine use of nitrous oxide as preliminary to ether.

The use of chloroform as an introduction to ether is a different story, for, while it possesses to quite an extent the advantages of nitrous oxide, when so used, it has the great disadvantage of being especially dangerous to life during the induction period, while nitrous oxide is remarkable for its freedom from danger.

MEDICATION PRECEDING ANESTHESIA.

The use of a hypodermic injection of morphine and atropine is recommended by competent authorities, and condemned by equally competent authorities. The objections urged are, that as one drug may augment the action of another, an overdose is more easily administered: that in case of accident there is not only the anesthetic to be eliminated, but the more permanent drugs as well: that the pupillary reaction is masked: that morphine allays the reflex excitability of the upper air passages, retards coughing, therefore favoring the retention of secretions or vomitus in the trachea so predisposing to pneumonia, and that morphine causes nausea in some patients. The advantages mentioned are: That the patient comes to the anesthetic room in a more quiet frame of mind, fear being decreased or absent, and with it one of the greatest factors in producing shock: that the secretions are decreased, rendering the air passages comparatively free, therefore reducing the dangers of pneumonia: atropine prevents reflex stimuli coming through the superior laryngeal nerve or its branches from causing a sudden inhibitory stoppage of the heart, and is a vasomotor stimulant: less anesthetic required, and in most cases both morphine and atropine tend to reduce nausea. Comparing these reasons for and against the use of a preliminary hypodermic injection in the light of 5000 administrations of ether in my own experience, in which a carefully regulated dose of morphine and atropine has been given in practically all cases, except children under five years and the very aged, the advantages seem to more than offset the disadvantages. All of the objections urged, however, may become very real if an overdose has been administered, and, for this reason, and because the use of the hypodermic is a part of the anesthetic, I believe that when used the exact dose should be indicated by the anesthetist.

WARMING OF ETHER VAPOR.

The warming of ether vapor has received considerable attention of late, and seems to be valuable. The possibility suggests itself that one reason for our better results under the drop method of giving ether over the old cone method may be that the smaller air and vapor space allows a certain amount of warming of the vapor, and that this with the continuous instead of intermittent administration, as by the cone method, may be the real advantage instead of the much talked of increase in the amount of air. It seems quite possible that there may not be such an increase in

the amount of air as some of us have thought, for certainly most anesthetists keep the gauze or small inhaler at least partly covered much of the time, and the result of experiments upon the value of a certain amount of rebreathing indicate that this is rather an advantage than the reverse.

For some time I have been experimenting with the warming of ether vapor, especially in operations on the face and throat where an inhaler cannot be used and the ether vapor is given through a tube, and I wish to show you a home-made apparatus which I am now using for that purpose. I do not claim anything original in this apparatus. It consists essentially of the bottle in which ether is vaporized and a cylinder of compressed air to obviate the necessity of using a hand or foot bellows. From this bottle the vapor is passed through a second one which contains warm water, and in its passage through this it becomes sufficiently warmed. The second cylinder is oxygen and is not a necessary part of the apparatus but simply a matter of convenience for use in cases where the addition of a little oxygen is indicated.

MISHAPS IN TREATMENT.

By DOUGLASS W. MONTGOMERY, M. D., San Francisco.

The therapeutic art is one acquired through long and painful experience, and can by no means be learned off-hand from books. The value of books in learning it is, however, indispensable, but statements in them must be compared with actual experience in order to make the knowledge fruitful.

Medicaments do not alone act differently in different individuals, but they act differently at different times in the same individual. A remedy that during the height of an eczema, where soothing applications are indicated, might be too weak, might be altogether too strong to use on a chronic eczema, where strong stimulating applications are needed. In addition to this there is the relative sensitiveness of the different regions of the cutaneous surface. Nowhere is this principle of fitting the remedy to the case so well seen as in inflammatory affections of the lower third of the leg in those whose circulation is none of the best. An indolent eczema in this situation that appears to need stimulation may be stirred up to destructive ulcerating activity if stimulating remedies are applied. The scrotum is another locality so sensitive that strong remedies may act on it in a highly disagreeable manner.

One evening I was called to see a young druggist, who, having a slight attack of poison oak, conceived the idea of treating himself. On looking into the matter he found menthol recommended as a good remedy for itching, and itchiness of the scrotum was exactly what he was suffering from. He thereupon made himself a fairly strong menthol preparation, which, on being applied burned atrociously. Now his chemical knowledge came to his aid, as he knew chloroform to be a fine solvent for menthol, and what better means could be devised for removing the tormenting stuff than to douse the scrotum with it. This was indeed liquid fire, and in itself would have constituted a very painful momentary experience, but unfortunately the menthol was already there to lend persistency to the torment. As is its nature the scrotum shrivelled up with the pain, and retained the menthol in the depths of its folds. All efforts to get the drug out or to wash it off only made matters worse. The patient grew frantic and hastened home. His pain accompanied him, however, and when I reached him his neurons were dancing with hysteria, with pain and with exquisite distress. Among other afflictions he had become persuaded he would lose his scrotum and testicles. While getting his story I really was busy turning over in my mind how to meet the therapeutic indications. It, of course, was of no use to try to wash or to wipe off the menthol. The contracted scrotum, as hard and rugose as a peach stone, would not permit of it. Happily I thought of bland heat, and ordered a starch poultice. The gentle heat would cause the muscles in the scrotum to relax, and the starch would soak up and dilute the menthol. I therefore ordered some hot water, which I poured on ordinary laundry starch to make a paste, and applied it. In a few moments the blessings of peace descended on that household.

The late Dr. W. E. Taylor used to say that the doctor who would apply either tincture of iodine or chloform to the scrotum ought to be crucified. Such applications are made, however, and I myself was once guilty.

At the opening of my career and while house surgeon in Chambers St. Hospital in New York, I was called to see a man suffering from gonorrheic epididymitis. As a bartender he had to stand all day, and so suffered both from the weight and from the tenderness of the diseased organ. To relieve him I decided to prescribe a liniment to apply on flannel, and to wear in a suspensory bandage. The liniment ordered was found in one of those students' manuals that contain so much concentrated, undigested knowledge, and consisted of equal parts of chloroform, tincture of belladonna, tincture of aconite and glycerine. The preparation was excellent in itself, but was accompanied by little or no explanation of its properties or uses. The man got the liniment and the piece of flannel. I can see him yet as he applied the medicament. The scene lay in a rather large, sparely furnished room up on the West side in New York. The patient was seated well forward in his chair so as to suspend the affected member, and allow him the more readily to apply the flannel soaked with the liniment, and he had the intent, preoccupied look incident to such occupations. The moment the application touched the scrotum he gave a roar, and if he did not reach the opposite corner of the room in one jump, he did in two. Tertullian thought that after death we shall travel from star to star; Victor Hugo in commenting on this said we shall then be stellar grasshoppers. My patient made an excellent initiatory attempt in preparing for the celestial job. While jumping about he emitted such a stimulating collation of vowels and consonants as I have rarely had served up before me. In

his eloquence, however, he used only words found in the Bible, although the syntax was different.

Well, I thought it not a question of what I was going to do for him, but what he was going to do with me. But I managed to retain my professional attitude, and set about to soothe his pain in every way I possibly could, and I think retired with his gratitude. Patients are a long suffering generation, and rarely hold grudges for the pain caused them. I suppose the reason is that it is so frequently necessary to inflict it, that it comes to be looked on as a matter of course.

Not long ago I had another instance in this kind. A patient applied for advice with one of those lichens that constitute the delight of the dermatologist. The lesions on the arm were light red, covered with a branny desquamation, and could not be distinguished from a seborrheide, except for the deep staining left after their involution. A few patches on the inner surface of the thighs showed some fairly characteristic papules, and there were no lesions whatever in the mouth. The papules on the scrotum and on the glans penis were, however, beautifully marked, especially those on the scrotum, where they were large, rounded, and contrasted strikingly by their light red color with the darkly pigmented surrounding skin. Furthermore their tops had that delicate lacework tracery sometimes seen.

Like almost all lichen planus patients he suffered from a gastro-enteritis, and had consulted a number of physicians to get relief. One of them, he said with a shake of the head, had advised him to apply a proprietary preparation, which is nothing more than flexible collodion, and added further, with an additional shake of the head, that I would be surprised if I knew who had given this advice. This advice must have been given as frivolously as an old wife's, for there was positively no therapeutic indication for the use of collodion, but the patient took the doctor seriously and made a liberal application. The chloroform did its work as a dolorific, and the collodion held it closely applied to its job. For a short time he was what Sir Walter Scott would call "A wretch concentered all in self."

The evident mistake this physician made in diagnosis was quite pardonable, as lichen is pre-eminently a disease for a specialist to diagnose. The mistake in treatment, however, was quite unpardonable both from an ethical and from a scientific standpoint.

The treatment of eczema constitutes the bulk of a dermatologist's work, and much of his success is due to his opportune manipulation of three great remedies: tar, lead and mercury. There are many others that are invaluable in meeting special indications, but these three are of prime importance. I think it was Crocker who spoke of the mild mercurial salts, in their quieting effect on cutaneous irritation and itchiness, as being the opium of the skin, and the red oxide, the yellow oxide, calomel and white precipitate are favorite forms in use. I employ the red oxide a great deal, and why it rather than the yellow oxide I do not know, but it seems to me I have better luck with it. The red oxide, however, has one grave disadvantage. It resembles the red iodid both in color and in name, and an unconscious substitution can easily be made. It is one of those errors that an educated, honest druggist can almost as easily fall into as an ignorant, dishonest one. Such mistakes should be set apart in a class by themselves, and viewed in all charity. The consequences of this mistake may, however, be very grave, for while the red oxide of mercury is a bland soothing preparation, that may be used as liberally as desired, and never, except in rare instances of idiosyncrasy, gives rise to trouble, the red iodid is so harsh as to be used in veterinary practice as a cauterizing powder, but is almost never employed topically in human medicine. I have seen the substitution of the red iodid for the red oxide about five times, and now when prescribing it I almost always write a note of warning at the bottom of the prescription. As an instance of this kind of mistake a woman came to me with an irritable, seborrheic eczema of the scalp, for which I ordered an ointment, containing, among other ingredients, six per cent. of the red oxide of mercury. She called the following day, not amiably disposed, and said:

"Doctor, you gave me a terrible time last night. You made a mistake in the ointment, so that I don't know if I shall ever get over it."

The inflamed appearance of the scalp justified her gloomy forebodings. She brought the ointment with her, and it was Turkey red, as red as a French infantryman's trousers, instead of being a shrimp pink as it should be, and showed clearly where the mistake lay. She then related to me that she applied the salve on retiring, and shortly it began to burn. She communicated her troubles to her husband, who with true conjugal frankness bade her go to sleep, as the doctor knew his business. Finally the pain became so intense that she removed the ointment, but continued to suffer severely.

In another instance a medical student was ordered, for eczema of the cheek, an ointment containing the red oxide. The druggist promptly dispensed the red iodid. If that medical student, now an electrical engineer, reads this article, it will remind him of old times, as such memories remain long vivid. The most dramatic experience of this kind was, however, in an eczema scroti. On calling on the patient the following day he looked at me with a moody eye, and said:

"You gave me a bad night of it, doctor. You made a mistake."

A few rapid words of explanation passed, and I asked to see the much blamed ointment. It was the same story, a Turkey red instead of a shrimp pink. He certainly had had a night of it. He could not reach me on account of some defect in the telephone service, and had called in three physicians, and I suppose they all damned me, and from their point of view were justified.

The above are mistakes that can easily be forgiven because they are not the result of greed or ill nature, and in no sense are made with intent to defraud. It is quite a different matter, how-

ever, when the improper compounding of a prescription is due to conceit, to love of unjust gain, or to laziness. I had once an unforgettable experience with a druggist, a self sufficient, introspective individual, whose chief companion was his dog.

A patient, a widow, had eczema and ulcer of the leg, and with it all, had to stand throughout the day behind a counter. Besides pursuing her livelihood she had a number of children to care for. She suffered excruciatingly, but had to smile and do her work. For such conditions peptone paste makes an excellent, bland, light, supporting bandage, the merits of which were first brought to my attention by Dr. H. Kugeler. The formula and mode of application run as follows:

R	
Peptone (dry)	
Amyli	
Zinc oxide āā	15.00
Gummae arabicae	30.00
Aq.	40.00
M et adde,	
Liq. cresol. co.	
Ol. citronella āā gtt x	
M.	
S.	
Schleich's paste.	

The ulcer is first dusted with a mild antiseptic powder composed of equal parts of acetanelid and boracic acid, and then there is fitted over it a piece of gauze. The Schleich's paste is then applied over the dorsum of the foot and the entire leg, followed by one layer of gauze bandage that sinks into and becomes incorporated with the paste. Over the whole is then run a moistened starch bandage, which is allowed to dry. Such a dressing may remain undisturbed for one or two weeks.

Having written the above prescription, I requested the patient to have it compounded, and to return with it as soon as possible, so that I might apply the bandage. She went to the above mentioned druggist, and when she returned, the preparation instead of being drab, to my astonishment was pure white. I telephoned immediately to ask an explanation. The druggist answered, it had been put up as ordered. I insisted that the peptone would make the paste drab. He then admitted that he had not added the peptone as he did not know what it was. I murmured back "Against stupidity the gods themselves fight in-victorious," and dropped the 'phone.

Many patients have a decided disinclination to go to the druggist indicated by their physician, and in other cases they may wish to go to their own druggist as they have gone to the doctor of their choice. This is only right as a druggist builds up his trade with people who have confidence in him, and it is just that he should get the trade he has earned. It therefore becomes a delicate matter for a physician to recommend too strongly any particular druggist. Steady bad fortune has pursued me, however, with a preparation that was first drawn to my attention by Dr. Oliver S. Ormsby of Chicago. It is a coal tar found in the Russian Caucasus, and is so prized by Dr. Ormsby that he said jokingly he would like to buy the entire supply. It is excellent in many acute inflammatory conditions of the skin, such as infantile eczema. My associate and myself, for instance, had been treating an obstinate eczema of the lower extremities, which was getting well with its usual deliberation, when we suddenly shifted to naftalan paste. The effect was magical. The patient was in haste to get to London, and he was enabled to leave right away, and he went well supplied with naftalan. A good prescription is:

R	
Naftalan	50.00
Zinc ox.	25.00
Amyli	25.00
M.	

Apply once or twice a day and remove by wiping it off with a cloth soaked in sweet oil.

A number of times other naphtha compounds have been dispensed in substitution for naftalan, and this is sufficiently vexatious, but one druggist had the effrontery to persist in his evil ways after being warned of his error. He dispensed something that smelt like moth balls, and made a white powder instead of a dark gray paste. Now we prescribe it so that if it is substituted, anyone can see that the druggist clearly wishes to cheat.

But mistakes are not limited to preparations meant for the exterior. At times the alimentary canal gets a fine warming up as witness the following:

One day during office hours a timid woman, for whom I had recently prescribed, drew a four ounce bottle of medicine out of a reticule, and apologetically remarked that she was unable to take it as it hurt her stomach. On looking at the bottle it was easy to see where the trouble lay; at least one quarter of the contents of the bottle was oil. I had prescribed gaultheria water to fill up the mixture, and the druggist had filled up, by mistake, with oil of wintergreen. The only way I can explain this mistake is undue haste. It was dispensed by a physician, who ran a drug store and practiced medicine. The practice of medicine is very irregular work, piling up in a tremendous rush and then slackening off. The man may have been caught in one of these rushes and poured in the oil without thinking what it really meant, which goes to show that lack of time should be classified as one of the incompatibilities of drugs.

The foregoing are only a few of the contrarieties met in practice. Any of my confreres might easily sit down and write out a list equally good. However, if in reading this it causes some merriment, as recalling similar experiences, and at the same time affords some instruction in our difficult art, the writer will be satisfied.

AN EPIDEMIC OF TRICHINOSIS.*

By GEO. H. RUNCKEL, M. D., McCloud.

In selecting the subject of trichinosis, it is my purpose to present to you observations on a series of fifty-eight cases, occurring at McCloud, California, during the months of November and December of 1911. While the subject is familiar in some localities, yet to the average practitioner it is rather rare. I will, therefore, go into some detail regarding the significant features. Having had five scattered cases during the past year, the present series were somewhat familiar and easy to diagnose.

History of Infection. About November 25th, 1911, an Italian farmer butchered some hogs, and converted a large amount of the flesh into a sausage known as salame. This he sold to the Italian laborers of McCloud. Being able to procure a fresh home-made article, there was eager demand for it, and nearly every family purchased some of the sausage. From one to five days after eating, acute gastro-intestinal symptoms of vomiting, diarrhea and pain in the abdomen began to manifest themselves, having much the same phenomena as are common in ptomain poisoning. A typical case will illustrate the general course of the infection.

Mr. D. R., aged twenty-one, Italian laborer. Habits good. Previous history negative.

Present Illness. On November 26th, 1911, patient ate some sausage obtained from a local farmer. Next day was seized with severe abdominal pain, vomiting and diarrhea. Took castor oil and vomiting ceased, but abdominal pain and diarrhea continued. On the sixth day, edema of the eyelids occurred. This was accompanied by fever, headache, pain in the muscles of the legs, arms and neck. Examination at the McCloud Hospital clinic December 3rd, 1911, shows a very characteristic appearance, i. e., eyelids markedly edematous, tongue exceptionally clean and moist, abdomen tender all over, muscles of legs, arms and neck very painful to palpation or motion.

Temperature 101.4°. Pulse 100. Respiration 20. Examination of urine, negative. Blood examination: White count, 14,800; polymorphoneuclears, 78%; lymphocytes, 8%; eosinophiles, 14%.

A review of the symptoms displayed by this group of cases proves several interesting things. The time of onset of gastro-intestinal symptoms was variable. In some cases, it occurred the day following the ingestion of pork, and in others did not occur until three to five days later. In a few mild cases no gastro-intestinal disturbance occurred. The vomiting did not last over one or two days in any of the cases. The diarrhea in six cases was very violent and resistant to treatment. In some cases it continued for three to four weeks; the bowels moving as often as 15 to 20 times a day. The seat of muscular pain was as follows: In all cases, pain occurred in the calf muscles, ham strings, biceps of arms and neck muscles. In five cases, there was, in addition, severe pain in the laryngeal muscles, causing great hoarseness and painful deglutition. In three cases, the intercostal and diaphragm were the severest points, respiration being extremely painful. In two cases, the masseters were the principal ones involved. In one case, a phlebitis of the femoral vein occurred. Edema of the lids occurred in all the hospital cases. This edema was concurrent with or shortly preceded the muscle pain. The edema was very marked in all cases. In one case particularly, it was so severe and painful that it looked like acute glaucoma, and hot boracic compresses were employed every hour for 48 hours before it could be relieved. Edema of the hands and feet occurred also in a few cases. The fever course was variable. In most cases, not exceeding 102°, only two reaching 104.2°. The pulse rate was always high, ranging between 80 and 120. The tongue in all cases was exceedingly clean and moist. Urine showed no abnormality in any of the cases. Blood count showed variable leukocytosis from 10,000 to 18,000 in those uncomplicated; eosinophiles ranged from 10% to 40%.

Incisions were made in two patients; sections of the gastro-cnemius muscle were taken from the outer head, and microscopical examinations were made. Numerous active free larvae were demonstrated. The sausage was also examined and found to be badly infected. Four to six larvae being seen under each field of the microscope. Numerous examinations were made of the feces, but no intestinal forms were found. Of the fifty-eight cases under observation there was one death (1.7%). In this case, the laryngeal, intercostal muscles and diaphragm were severely attacked. Respiration was so much embarrassed that a pneumonia developed. This case was complicated by round worms, patient having passed six during the hospital period. Portmortem specimens were examined, and the infection was found to be very severe.

Treatment. During the acute stage of gastro-intestinal disturbance, castor oil was given. This was followed by glycerine in half-ounce doses every hour. Acetozone, 15 grains to a quart of water, was given every two hours in four-ounce doses. Quinine, in five-grain doses, was given every four hours for fever. As soon as the febrile condition was over, the patient was put on iron, quinine and strychnine to combat the anemia and to improve the appetite. The diet was liquid until the fever subsided, then foods were added as seemed justifiable. The usual diarrhea mixtures were employed for the bowels. All cold water and other cold drinks were forbidden. Bismuth subnitrate in ten-grain doses was also given. Morphine was used when the pain was very severe. Convalescence was variable; some recovering quickly, while others complained for several months. All are now free from symptoms.

(*Note.* A case of mine, infected with trichina about three months ago was, at that time, about six months pregnant. After the usual course, she became entirely free from symptoms. On January 29th, confinement occurred, and everything appeared to be normal. Two days later, however, the patient was seized with violent diarrhea, and

* Read before the Sacramento Society for Medical Improvement, April 23, 1912.

had a temperature of 103°. Oleum ricini was given and quinine, in five-grain doses every three hours. In two days she was normal again. This may have been only a coincidence, but deserves to be mentioned here.)

Conclusions. First. The severity of the cases seems to depend upon two things:

A. The degree of infection.

B. Muscular localization. Infection of larynx and diaphragm being the most dangerous.

Second. The diarrhea was not confined to the severe infections, but was found most commonly in the milder cases.

Third. The constant, clean moist tongue found in every case seemed a point of great significance, considering the amount of gastro-intestinal disturbance present.

(*Note.* The epidemic recorded above occurred in the combined practice of Dr. R. T. Legge and the writer.)

THE COUNTY HEALTH OFFICER AS THE LOCAL REGISTRAR FOR EACH COUNTY IN THE STATE.*

By GEO. E. TUCKER, M. D., Riverside.

At the request of several of the members of this Society I have prepared a short paper in order to present to you the subject of "The County Health Officer as the Local Registrar for each County in the State."

I am not prepared to state that I know that this plan will correct all the evils which exist under the present method, but I feel sure that every one of you has long since realized the necessity of altering our present system, if our death certificates are to be of any value from the legal or vital statistic standpoint.

Under the present plan the County Recorder of each County acts as the Local Registrar and keeps in his office records of all births and duplicate of death certificates, and is authorized to issue burial permits, his duties in this regard being the same as those of the City Health Officer of incorporated towns.

Upon investigating death certificates on file in the office of our County Recorder for the year 1911 and for three months of the year 1912, I find that more than 50% of them are improperly filled out, more than 50% are incomplete and I find several instances where the place of death is not indicated, where the name of the deceased is not indicated, where the sex is not mentioned, color or race not indicated, date of death not indicated and the cause of death wholly inadequate, unintelligent, or absurd, a number of instances where the death certificate has not been signed by a physician or coroner, the place of burial or removal not indicated, the name of the undertaker not indicated.

In more than one instance I found death certificate had been signed by a physician where the cause of death clearly indicated that the coroner should have been called.

And so I might enumerate some deficiency in practically every certificate of the 150 registered for the year 1911.

I consider those certificates which have not been signed by any physician and where no undertaker nor the place of burial has been indicated examples of gross negligence on the part of the registrar.

I was very much surprised and chagrined to find recorded a number of deaths from typhoid fever and scarlet fever. Cases which occurred outside of incorporated towns, within my jurisdiction, but were never reported to me.

Under the system which I wish to recommend, few, if any, of these evils could occur in instances where the County Health Officer was competent and willing to attend to the duties of his office.

I believe that at the next session of the state legislature an effort should be made to bring this matter to the attention of this body and if possible, to have the law changed so that these records may be of some value to the state from a legal, vital statistic and public health standpoint.

I presume there will be some effort made by County Recorders, because of the few cents which they receive for forwarding copies of these certificates, to keep the records in their hands. If it is of any value that copies of birth and death certificates and marriage licenses should be in their hands, it is a very easy matter to have a triplicate copy made and the same forwarded to the office for filing.

Examples.

1. Name of deceased not given.
2. Ulcerative Pkisis.
3. Double Pneumonia, no indication of type.
   Contributory—Weak heart, 7 dyas.
4. Contributory—Chronic Neprictis,
   Coroner.
5. Septicemia—1 mo. 8 days.
   Contributory—Pneumonia, 1 mo.
6. Chronic Atitis, which attacted him, causing paralysis and death.
   One day duration.
7. Cancer or Carcoma of the stomach.
8. Myro Carditis.
9. Uremia—5 days.
   Contributory—Prostatic disease.
10. Uremia and lack of vitality.
11. Acute Bronchitis,
    Contributory—Cystitis.
12. Pericarditis—
    Contributory—Rheumatism.
    No physician signed, no undertaker indicated.
13. No undertaker, not place of burial indicated.
14. Chlorea-morbus, few hours.
    92 years 11 mos. 11 days.
15. Place of burial not indicated.
16. Tomaine poisoning and Uraemia.
    No doctor indicated.
17. Disease of liver and stomach.
18. Tumor of brain,
    Contributory—Accident on bicycle.
19. Spinal Meningitis, no type indicated.
20. Cardiac failure,
    Tuberculosis.
22. Accidental crushing of body by falling tree, causing death in about 15 minutes. Witnessed by several and I saw child a few moments after dead. No coroner.

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

23. Epilepsy, Alcoholic.
24. Spinal Menengitis, no type.
25. Brights disease.

1911.

Jan.	15
Feb.	14
Mch.	7
Apr.	12
May	14
June	7
July	7
Aug.	14
Sept.	13
Oct.	18
Nov.	15
Dec.	14
	150

HYGIENIC LABORATORY OF THE STATE BOARD OF HEALTH.*

Report by W. A. SAWYER, M. D., Berkeley.

At the beginning of the current year the State Board of Health established a Division of Epidemiology under the Bureau of the Hygienic Laboratory. As a result, we anticipate being able to do more than ever before in studying and controlling epidemics. The Division has already made decided progress along two lines of investigation, both of which depend to a great extent on the laboratory side of the work.

The first epidemiological study was that of the present epizoötic of rabies. The pin map in the laboratory and our records of examinations of animals' heads show how the disease in California first became prevalent in Los Angeles in the summer of 1909. It spread over a large part of Southern California and finally crossed the Tehachapi mountains in January, 1911, when it appeared in Bakersfield. From there it moved steadily northward and became very prevalent in Kings, Tulare, and Fresno counties. North of this there had been, until recently, no indication of the disease except a few scattered cases. The disease is now present in Merced, Stanislaus, San Joaquin, and Contra Costa counties, and in San Francisco.

We have made 210 examinations of animals' heads for rabies at the State Hygienic Laboratory in the past two and one-half years. 149 of these showed positive evidence of rabies. The increase in the number of cases is indicated by the fact that in the first year and a half we had 44 positive cases, and in the last year, 105. The months showing the most examinations were those of the past winter.

In San Francisco we had a case in October, 1911, and no other until January 30, 1912. During February and March and the first half of April, the laboratory of the Health Department of San Francisco examined 104 brains for rabies; 75 gave positive results. Two of the San Francisco cases were human and were confirmed by examinations in the city and state laboratories. Ten human deaths have occurred in California up to date; 7 in Southern California, one in the San Joaquin Valley, and two in San Francisco.

The second epidemiological investigation which I wish to call to your attention is a study of cases of typhoid fever among sailors. Some time ago it was noticed at the Marine Hospital in San Francisco that a great many typhoid cases came from a single ship. This was brought to the attention of the State Board of Health last December. Our investigation was carried on in two ways, by field work among the ships and by laboratory examinations. We found that a "carrier" on board a lumber steamer was responsible for twenty-seven cases. Four of these died. The cases from this "carrier" which were sent to the Marine Hospital represented one-fourth of all the cases of typhoid admitted to that hospital during nearly four years, and one-third of the deaths.

These two studies are examples of the kind of work which will be carried on by the Division of Epidemiology.

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

DIAPHRAGMATIC PLEURISY.*

A Stumbling Block in the Consideration of the Acute Abdomen.

By DANIEL CROSBY, M. D., Oakland.

In these days of rapid surgical advance, more and more those men who are doing only occasional surgery are operating upon patients who were heretofore left for the consideration and discretion of the surgical specialist.

The immediate and amazing relief which follows successful surgical intervention in acute conditions in the abdomen has placed the general public in a receptive mood leading to the ready acceptance of advice for operation with the result that many abdomens are opened before the operator has taken the pains to establish premises for his procedure, and in no group of cases perhaps is there more chance of error, and more demand for painstaking inquiry and observation than in those cases of abdominal pain in which a lesion above the diaphragm may be a causative factor.

Appendicitis, its dangers and disasters has set even the most poorly informed of the general public by the ears and a medical attendant who does not recognize it speedily, comes in for a full measure of condemnation. Furthermore, an increased interest in and understanding of evidence of ulceration of stomach and duodenum with the not infrequent resultant perforative peritonitis keeps medical men upon the qui vive to identify such catastrophes

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

and operate for their relief at the earliest possible moment.

With a patient young or old in a marked condition of distress, with fever, vomiting, respiration labored and increased in frequency, anxious cast of countenance, high blood count, "nothing much showing in the lungs," and with a medical attendant who has a keen and bitter recollection of a patient lost because in the past he or a confrere had failed to recognize a perforated gastric ulcer, the temptation to open the abdomen is pressing. If this be done, a normal abdomen found, and a pneumonia discovered within the succeeding 48 hours "ether pneumonia" as an unfortunate complication covers up some sins of omission in diagnostic effort.

While there are many abdominal conditions upon which we may go astray the one to which most particularly we allude are perforated gastric or duodenal ulcer and appendicitis; and in referring to diaphragmatic pleurisy as a "stumbling block," the writer is not so much alluding to the more unusual simple pleurisy as to the basilar pneumonia which is so often masked for 24 or more hours and overshadowed by preponderating abdominal symptoms which take the observer far afield.

Medical literature is full of references to cases of this sort and if there be any virtue in this paper it will be merely that of serving to emphasize what J. P. Crozier Griffith refers to as the "Well recognized, long known, but frequently forgotten tendency of patients with pneumonia or pleurisy to refer their pain to the abdomen." (*Jour. Am. Med Assn.,* Aug. 29, '03.) Numerous journal articles and most of our text books refer to the "well known abdominal onset" or the "well known abdominal pain" in certain cases of pneumonia, and most writers dismiss the subject with such a reference.

Osler (Practice, p. 651) says, "Intense subjective with trifling objective symptoms are always suggestive of diaphragmatic pleurisy," and men of close observation and wide experience become sufficiently adept to estimate at something like its true value, the complaint of abdominal pain. But what of the man who sees for the first time a rugged man or a sturdy child stricken suddenly with such an illness the very urgency of all the symptoms of which tends to confuse his efforts to eliminate or establish the value of any sign?

Case in point 1. J. B. French artist 46 years old. User of alcohol in all forms, denies lues. Had tracheotomy done in early childhood in Paris; wore a tube for a long time and has some constriction of the trachea which has always noticeably interfered with his breathing and given him a peculiar dry whistling cough—always without expectoration.

He also gives a long history of stomach trouble, nothing, however, indicative of ulcer, save such as his alcoholic history would suggest. When the writer was called to see him he was found sitting in a chair, weak and exhausted, covered with sweat and suffering from severe abdominal pain which was referred to practically the entire right half of the abdomen. There was no history of a chill and the pain had come on suddenly about 8 hours before, followed by vomiting and collapse. Vomiting occurred several times before and after seeing him. His temperature was 100° F., respiration 32, pulse 130, small and weak. He was removed to a hospital at once and a very thorough examination made. His lungs were clear, his heart much enlarged as was also his liver. His abdomen was fat and distended and inasmuch as he was a very nervous man it was difficult to determine whether there was much abdominal relaxation during his morning expiration. Between his efforts at vomiting, his groaning, and his extreme restlessness he was a difficult subject for examination. But there was definite tenderness over the 10th, 11th and 12th ribs on the right while all of his pain was referred to his abdomen. During all of this time, and through the day and succeeding night this man dripped with sweat.

Blood count: White cells, 22,400; polynuclears, 89%; large mononuclears, 6%; small mononuclears, 5%.

He was given a small dose of heroin, sufficient to make life tolerable, and I remained at the hospital to watch him. About 2 a. m., 16 hours after he was first seen, by standing at the head of the bed and observing the patient's uncovered chest as he lay upon his back, the writer noted that the excursion of the right base of the chest was decidedly less than the left. We shaved the patient's very hairy chest and at the base of the right lung in the axillary line and posteriorly found a few rales at the end of inspiration. Six hours later he raised a little blood-stained mucus and our diagnostic problem was largely solved. Within another 24 hours effusion had occurred and he had no more pain.

This man had shock enough for an exploded appendix or a perforated gastric ulcer; he had a long history of gastric difficulty; he had pulse and temperature which would go with either condition, but though he really sought operation the facts that peristalsis had not ceased, that palpation did not increase pain, that some expiratory relaxation was obtainable; and that there was a diminution of excursion of the right chest, kept us out of his abdomen long enough to make a diagnosis.

Case 2. Sturdy colored child 7 yrs. old, taken suddenly with abdominal pain, rigidity, repeated attacks of vomiting and high fever. Attendant's diagnosis of appendicitis accepted by one, and rejected by another consultant in favor of pleurisy of the diaphragm. He was seen by the writer on the third day because the attendant was still convinced that the child had an exploded appendix and he felt that he should operate. History (obtained from mother) showed child had slight cough and was not quite well for one week before onset of urgent symptoms. Pain came on suddenly accompanied by persistent vomiting and high fever. The child was found lying slightly upon his right side, his respiration catchy, 42 per minute, alae nasi dilating at each inspiration and each grunting expiration, interrupted by a short, sharp cough. His pulse was 126, full and strong, his abdomen was distended and any effort to palpate it elicited cries of fear from the lad. By making firm, steady pressure, however, and by the exercise of a little patience, the abdomen could be palpated readily and the expiratory relaxation helped to eliminate peritonism from serious consideration. A shower of crepitant rales in the base of the right lung laterally and posteriorly cleared any remaining doubt; the attendant informed me that he had heard a few small rales on the evening before when the previous consultations were held but he thought that to be due to a hypostatic condition.

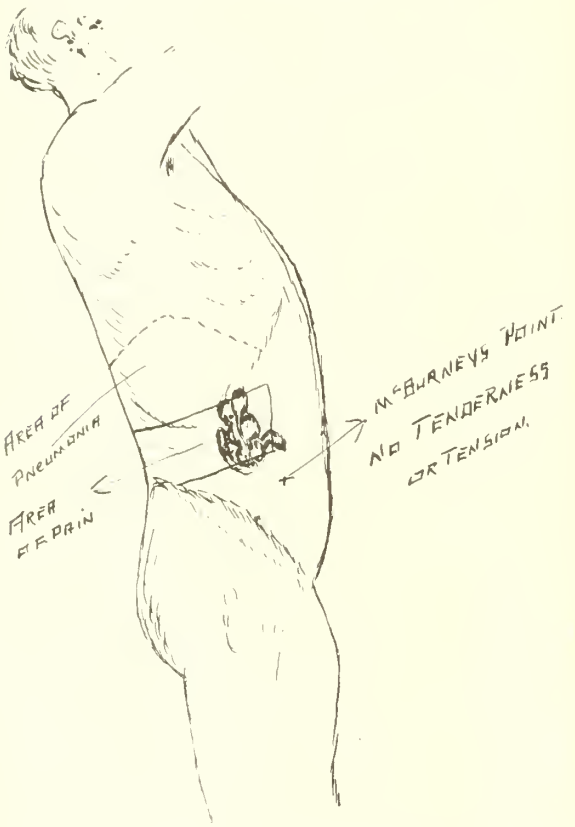
Case 3. A sturdy boy of 8 yrs. son of a physician, without premonitory symptoms complained of great pain, with rigidity of abdominal muscles, slight dry cough, spasmodic grunting, shal-

low respiration, temperature 101°, pulse 106, respiration 40, no previous history of cough. Chest was clear. The writer made a diagnosis of diaphragmatic pleurisy.

Blood count: Total whites, 15,400; polys., 80%.

Within a few hours this lad was seen by Drs. Wallace Terry and W. A. Clark and they concurred in the diagnosis. During the succeeding 24 hours a few small, crepitant rales were heard in the base of the left lung anteriorly, and then they disappeared as did all of the symptoms of distress and illness. Save for the blood findings, this was apparently a case of simple diaphragmatic pleurisy.

Case 4. V. H. G., age 8 yrs. Notes supplied by his father, a practicing physician. "The present illness was ushered in by a severe headache, and stupor with delirium at times, also gastric symptoms which were thought to be due to eating green cherries. After cleaning out the bowels he seemed to be a little better for about 2 days. Then he began to complain of severe pain which he located in the region of the appendix. At this time on making an examination I thought I discovered a friction sound on his right side."



He has given phenacetin and dover's powder, sufficient to control some of his pain, and on the 4th or 5th evening the lad's temperature arose to 105°. Dr. W. A. Clark was then called, the attendants feeling that the patient required surgical attention. By the time Dr. Clark arrived the boy had been lulled to sleep by the sedatives and his whole condition was masked. A few hours later, however, when it was the writer's privilege to see him, the lad's suffering was intense and his rigid, distended abdomen was not a comforting thing for any of us to look upon.

However, his disturbed pulse respiration ratio, his grunting respiration, his distended alae nasi, his expiratory abdominal relaxation all spoke of trouble above the diaphragm. A patch of dullness in the base of the right lung posteriorly with a shower of crepitant rales completed the picture. This boy passed through a severe pneumonia and afterwards developed right-sided empyema which finally cleared.

Case 5. Supplied by Dr. Galbraith, father of the lad described as Case 4. Boy of 9 yrs. Had chill followed by headache, temp. 105°, severe pain in pit of stomach and in right shoulder, three days later there appeared a patch of dullness with fine rales at the end of inspiration at base of lung on left side. The boy passed through a typical pneumonia.

Case 6. Frenchman, 36 yrs. History of acute arthritis and pericarditis at 20. When apparently recovering from an attack of acute arthritis he developed a severe attack of abdominal pain with sweating, high temperature, and precordial distress.

Status: Patient pale and drenched with sweat, respiration 38, labored and catchy; pulse 136. Diminished excursion of left base anteriorly A. C. D. slightly increased. Auscultation; pericardial friction rub, as well as mitral and aortic regugitant murmurs. Abdomen distended and rigid, but relaxed somewhat on expiration and pain was not increased by palpation though the patient's entire complaint was of abdominal pain and slight precordial distress. He had been given a laxative but no movement had occurred for 2 days.

A few hours later the patient died suddenly and the postmortem revealed a clear abdomen, pneumonia in base of left lower lobe anteriorly with diaphragmatic pleurisy; extensive adhesion between the pericardium and left lower lobe of lung, pericarditis and endocarditis.

This man was markedly prostrated, and practically all of his complaint was of his abdomen, yet the cause of his pain was above the diaphragm.

Case 7. H. C., 12 yrs. Sturdy boy. Had been feeling badly for 4 or 5 days and had slight cough. Taken ill suddenly with pain in right hypochondriac region, vomiting, headache and high fever. He was seen by the writer within 12 hours and found lying upon his right side breathing with difficulty and in great pain. His face was flushed, tongue dry and furred, alae nasi dilating with each inspiration, respiration 38, shallow and grunting. Temp. 103.5°, pulse 120. His abdomen was distended and absolutely rigid during inspiration but relaxed moderately during expiration. There was tenderness over the 11th and 12th ribs on the right side. His chest was clear, but upon viewing it from the head of the bed as the boy lay flat on his back a decided diminution in the excursion of the right chest was noted. Within 24 hours rales appeared in the right lower lobe laterally and most of the pain subsided although the tenderness over the 11th and 12th ribs remained. The boy passed through an ordinarily severe attack of pneumonia and on the 9th day the temperature dropped to 97°. During the night, however, the lad complained of more pain and I was called to see him early in the morning, to learn he was having pain in his right hypochondriac region especially posteriorly.

An area of thickening or rather of tension was present in the right hypochondrium and the lad complained of some pain upon moving his right leg. Blood count, 14,200; polys., 79%. A diagnosis of appendicular abscess with a probably undescended large bowel, was made and the lad removed to the hospital for operation. His temperature was 103° and he seemed very ill.

Operation revealed a retroceal abscess which, because of the shortness of the ascending colon, was also practically a sub-hepatic abscess, and most of the appendix was disintegrated.

The lad returned to bed in very bad shape but he rallied and did very well for a few days, save that the right lung was slow in clearing up, and three weeks later it was necessary to re-operate to evacuate a very high subhepatic abscess. The lung is clearing up and the boy is now on the high road to recovery.

Here we had a boy who had a perfectly typical lobar pneumonia with evidence of abdominal pain most of which subsided within 48 hours upon the appearance of an effusion.

The whole pneumonic picture was complete and we again had our attention called to the abdomen. The state of disintegration in which the appendix was found proves beyond question that the attack of appendicitis was much more than 24 hours old, and we are in no way able to declare that the two conditions did not develop simultaneously.

There was no broadening of the abdomen, and this is probably due to the fact that the appendix was behind the colon and very high up. The sketch shows the location of the appendix and its abscess.

These case reports have been run through rapidly but no words of mine can depict the suffering experienced by a few of these patients who were manifesting "the well known abdominal pain," as an accompaniment of pneumonia.

If we consider pain, fever, headache, vomiting, abdominal rigidity, with its small, running pulse, as evidences of peritonism, we have the same symptoms to consider in cases of "abdominal onset" in pneumonia.

A few points we must bear in mind: 1, History and age of patient aids materially; 2, the onset of fever is more sudden, it goes higher and is more sustained in pneumonia; 3, headache and dry furred tongue more pronounced and occur earlier in pneumonia; 4, vomiting is more frequently repeated in pneumonia; 5, evidence of shock is practically always more marked in the abdominal condition though it may be simulated by pneumonia; 6, tender points may be found along the insertion of the diaphragm in pleuritic conditions; 7, abdominal rigidity occurs with the first evidence of pain in diaphragmatic difficulty but it awaits the occurrence of some peritonitis in the abdominal conditions. Patience in examination will reveal expiratory relaxation of abdomen where diaphragm alone is concerned.

From the standpoint of diagnosis we must reiterate the all but worn out adage "get your history" and let it be complete. History practically holds the key in the gastric or duodenal perforation cases. Having obtained the history, do not permit the apparent urgency of the symptoms to interfere with a painstaking examination. The man who finds a rigid abdomen will hunt for a head zone, he will try the legs for evidence of pain in the right psoas muscle, he will uncover the abdomen, and step to the foot of the bed to get an accurate impression of the respiratory excursion of the abdomen and its contour. But having done these things, he views the thorax from the same position, if at all, and rarely do we see a man uncover the chest and then go to the head of the bed and standing in a position to view both sides of the thorax from the median line thereby see and be able to judge the relative excursion of each side. If then he have a thoracic condition confronting him he will see quickly the limitation of excursion bespeaking a diaphragm arched up, like some lashed colt in a quivering resistance to a second blow. The grunting, catchy respiration with these other signs ought to keep him from going astray in his findings.

Discussion.

Dr. I. W. Terry, San Francisco: I think it is a good thing to draw attention to these errors or possible errors. Personally I have been guilty of opening the abdomen three times in pneumonia or diaphragmatic pleurisies because I could not make the correct diagnosis. In one of them after the removal of a perfectly normal appendix a very careful examination of the lungs failed to show anything abnormal and it was not until 48 hours later that a diaphragmatic pneumonia was manifest. It is very possible that had we observed the excursions Dr. Crosby mentions we might have avoided this. In these examinations in stepping to the head of the bed and looking down, one should have the light coming from the foot or from the head. One can easily mistake the excursion of the diaphragm unless the light is arranged just right. One other point in the diagnosis—it seems to me that ordinarily the leukocyte count is higher in the beginning pneumonias than it is in the appendix or intra-abdominal cases. In one of my cases there was a leukocyte count of 24,000 with very marked rigidity of the abdomen but not enough localized tenderness to account for it and not until a number of hours later could pneumonia be diagnosed. The last case is very interesting from a diagnostic standpoint. Dr. Crosby certainly worked it out very admirably.

ANTITYPHOID VACCINATION.*

By MAJOR BROOKE, U. S. Army.

Before taking up the prophylactic treatment of typhoid fever, I will preface my remarks by referring briefly to the morbidity and mortality of this disease in recent wars and in the United States at the present time.

During our civil war 80,000 cases of typhoid fever were recognized as such amongst the federal forces and probably as many more sick were accounted for under other heads, owing to the imperfect methods of diagnosis present at that period. In the Franco-Prussian war over 70,000 cases were reported in the German army. During the Spanish-American war about 20% of the men in the national encampments came down with the disease, of which 7% died, and it developed in 90% of the volunteer regiments within eight weeks of mobilization. In the South African war the British forces, consisting of 555,000 men, had 57,684 cases, of which 8,225 died. According to Osler about 500,000 people in this country incur enteric fever annually, with a mortality of from 35,000 to 40,000.

Certainly any measure capable of preventing typhoid fever or reducing the mortality of this ubiquitous disease is worthy of careful study and consideration.

Simmons and Frankel, as early as 1886, discovered that it was possible to immunize animals against the typhoid bacillus, by inoculating them with living cultures, but no further progress was made in this line until Brieger and Wassermann found out six years later that it was practicable to protect animals by the use of dead organisms.

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

This important discovery made it possible to conduct experiments on human beings and a few years later it was definitely proved that immunity secured by employing vaccines was associated with a marked increase of both agglutinins and bacteriolysins, just as in immunity produced by an attack of fever.

While perhaps not the first to employ killed cultures of typhoid bacilli, or what is now commonly termed antityphoid vaccine, to produce immunity against this microorganism, Sir A. Wright was the first one to urge its use and employ it on a large scale. Although his work was encouraging, it was not satisfactory enough to enthuse others and following the Boer war the employment of antityphoid vaccine fell into disuse. This was due to the imperfect immunity secured, the severe reaction following its administration and the possibility of a negative phase. The last objection Wright himself called attention to, realizing it would render the subject more susceptible to enterica, if exposed to infection immediately after inoculation.

The further use of antityphoid vaccination was largely due to the careful and scientific work of Sir Wm. Leishman and his assistants. Their experiments demonstrated that it was possible to effectually immunize people against typhoid fever, without producing a negative phase and without any general or only a slight general reaction, in the majority of cases. These brilliant results were obtained by making the following changes in the preparation and the administration of the vaccine:

Employment of non-virulent cultures.

Preventing subsequent contamination of the vaccine by preserving it in ¼% lysol.

Accurate standardization of the product.

Employment of divided doses in its administration.

The establishment of the entire subject on a sound scientific basis and the wonderful results obtained in the vaccinated troops sent to India reawakened Major Russell's interest in the matter, in 1907. Since that time, chiefly on account of his work and his advocacy of antityphoid vaccination, our entire army has been inoculated and considerable interest aroused in the medical profession throughout the country.

As used in our army to-day, the antityphoid vaccine is prepared by growing a non-virulent culture of typhoid bacilli on agar for about twenty-four hours, washing these off with salt solution, sterilizing them at 53 degrees C., or a little above this point for an hour, standardizing the product and adding a small amount of liquor cresolis compositus to prevent subsequent contamination. Many modifications of the above method have been used in the preparation of the vaccine, but I will only mention one here. Russell reports that antityphoid vaccine sterilized by formalin remains active longer and seems to give greater protection to rabbits than that sterilized by any other method, hence it is not improbable that the latter method may supersede the former in the preparation of vaccine for human use.

The vaccine is given in three doses, at intervals of ten days each and is usually injected, with an ordinary hypodermic syringe, under the skin, at the insertion of the deltoid muscle. As the vaccine is a suspension in salt solution, the container should be shaken before the emulsion is drawn into the syringe. The administration of the vaccine in divided doses is an important factor in increasing its immunizing action, it also lessens the liability of a negative phase and reduces greatly the local and general reactions.

The initial dose contains 500 million bacilli and the other two one billion each. A local reaction always occurs and consists usually of some redness, heat, tenderness, slight swelling and infrequently pain at the site of inoculation. One or all of these signs of inflammation may continue from two to four days. Occasionally the above symptoms are exaggerated and even enlargement of the axillary lymphatic glands may be noted.

No general reaction occurs in about 60% of those vaccinated and a mild reaction in about 35%; so altogether the general reaction is absent or insignificant in about 95% of all cases. In a few people the reaction is so severe that the subject has to take to bed and he may be quite uncomfortable for several days. I have never seen any permanently harmful action that could be definitely attributed to the vaccine follow its employment. However, I agree with Davis that it should not be given indiscriminately to the weak or infirm.

One case came under my observation, after the second dose, with a temperature of 102.5 degrees F., considerable headache, backache, coated tongue and loss of appetite. On the fourth day moderate enlargement of the spleen was noted and about half a dozen spots suspiciously like rose spots appeared on the abdomen. For a while I feared the man had contracted typhoid fever, just prior to the first inoculation, and had a blood culture made for typhoid bacilli. The next day I was gratified to find the temperature normal, all the symptoms rapidly disappeared and needless to add the blood culture was sterile. The third dose, which in this case, was given on the fourteenth day after the second one, did not cause a general reaction.

Recent experiments by Russell and the English authors show conclusively that a negative phase ordinarily never occurs and that the agglutinins and the protective bodies in the serum are always increased following inoculation. The possible presence of the former must always be recognized in the diagnosis of an inoculated subject suspected of having typhoid fever and usually persists in the blood in sufficient quantity to agglutinate typhoid bacilli in dilutions of from 1-50 to 1-100 for a period varying from one to four years.

How long immunity from typhoid fever, induced by vaccination, lasts is not definitely known. Most authorities agree that 90% of those inoculated will be protected for from two to three years and no doubt a smaller per cent. much longer. As far as I am aware, no data has been published giving any information of how long immunity will con-

tine, reinforced by second and third inoculations at intervals of two to three years. Scarcely enough time has elapsed to determine this period by actual experiment, but I anticipate that each succeeding vaccination will confer protection for a longer period than the preceding one.

The results obtained by the use of antityphoid vaccine to-day are much superior to those produced by Wright in his early work. During the Boer war, Wright inoculated about 100,000 men. Among these, the incidence of the disease was cut down 50% and the mortality among the inoculated who subsequently contracted fever was one-half of what it was among the non-vaccinated.

In 1905, 150 individuals of the 17th Lancers, out of a total of 593, were vaccinated while en route to India from England. Shortly after taking station at Meerut, an epidemic of enteric fever prevailed. Sixty-three cases occurred, of which sixty-one were among the non-inoculated and the other two arose in men who refused the second immunizing dose. Prior to the Gettysburg maneuvers in 1910, ninety-two men out of 118 of Company "A," First Battalion of Engineers, received antityphoid vaccine; two others had had typhoid fever and were considered immune. Of the twenty-four non-protected, six, or 25 per cent., incurred typhoid fever. No cases developed among the ninety-two vaccinated men.

In India among the white troops, which average 70,000 annually, the admission rate and the death rate from typhoid fever have gradually fallen from 15.6 and 3.19 per thousand in 1906, to 4.6 and .63 per thousand in 1910. During this period the percentage of the command vaccinated has increased from six to eighty. No more convincing statistics upon the efficiency of antityphoid vaccination in the prevention and the reduction of the mortality of typhoid fever, upon a large scale and for an extended period of time, have yet been published.

In the maneuver camp at San Antonio last year, although typhoid fever existed in the vicinity, only two cases occurred among the troops—one case in a civilian teamster who had not been vaccinated, the other case in a soldier who had received two of the three inoculations. This is a striking contrast to the 20 per cent. afflicted in the national encampments during the Spanish-American War.

Many more military statistics upon the efficacy of antityphoid vaccination might be quoted, but would be out of place in a short discussion of this kind.

Before completing this part of my paper I do not want to give you the impression that antityphoid vaccination has been the only factor in reducing the morbidity of enterica. Searching out and isolating typhoid carriers, progress in sanitary science and the realization of the necessity of thoroughly carrying out approved measures have had their place, but any one who will make a critical study of the question will, in my opinion, be convinced that antityphoid vaccination has been by far the most potent measure at our disposal.

That antityphoid vaccination can be extended to other fields with beneficial results is shown by the reports upon the inoculation of nurses by Richardson and Spooner of Boston and Davis of Chicago. Richardson states that a hospital nurse in Massachusetts is about eight times as liable to contract typhoid fever as the ordinary citizen. Spooner found for the decade prior to 1909, from two to six nurses developed typhoid fever annually at the Massachusetts General Hospital. In 1909 and 1910, following the employment of antityphoid inoculation, only one nurse incurred this disease and her case ran a mild course. The experience of Davis in Chicago has likewise been encouraging.

Unquestionably the immunization of doctors, nurses and orderlies attending typhoid patients is unqualifiedly called for and should be urged whenever practicable. In mining camps and wherever large bodies of people are crowded together, under imperfect sanitary conditions, a like procedure should be strongly advocated. In towns and communities where an epidemic is prevailing, all unprotected persons should be advised to avail themselves of its use. Whether antityphoid vaccination will ever be as universally employed as vaccination against variola, I cannot say, but I am prepared to recommend its general use in all unprotected healthy individuals under forty years of age.

Reasoning from analogy, one would think that antityphoid vaccination ought to be indicated in ridding typhoid carriers of their infection, but unfortunately its use here has not been very promising. Conversely its employment in the treatment of typhoid fever would appear to be adding more fuel to the flame. Nevertheless Leishman reasoned that if antityphoid serum reduced the mortality of this disease by increasing the opsonins and the phagocytic activity of the leukocytes, the same results might be obtained by the judicious use of antityphoid vaccine. The experience of Smallman, Kennedy, Pollock and other English observers would tend to confirm this view. Personally, I have had no experience in the treatment of enteric fever with antityphoid vaccine and will dwell no longer upon this phase of my paper.

I trust I have not conveyed the idea that we should, for one moment, relax our efforts in carrying out all sanitary precepts known to be efficient in the prevention of typhoid fever. My object has been to emphasize the importance and endeavor to prove to you the utility of a supplementary measure, readily obtainable, easily applied and that promises greater success in reducing the morbidity and mortality of typhoid fever than any procedure heretofore advocated.

Discussion.

Dr. W. V. Brem, Los Angeles: I wish to express my appreciation of a paper of this kind which deals with an ever-present disease—500,000 cases a year in the United States and [illegible],000 deaths. It seems to be much more desirable to be associated with a movement tending towards the control of a common, everyday disease that has lost some of its interest perhaps because of our familiarity with it, than to gain distinction by the discovery of rare organisms, causes of disease that have but little influence on human life. We want more work on the widespread diseases and we want to hear less

of rare things. I have had a little experience in anti-typhoid vaccination. In Panama there was a small epidemic among the nurses of the hospital and we were unable to discover the origin. Neither the water nor the food supply could be convicted and a search for a typhoid carrier was fruitless. There was quite a little disturbance in the minds of the nurses and we instituted vaccination, making it voluntary. About 20 nurses and physicians were vaccinated and the epidemic ceased. At another time, my own little girl, if you will pardon the personal reference, developed a typhoid-like fever and we isolated from her blood the paratyphoid "B" bacillus. I vaccinated my family and none of the others became ill. Regarding the treatment of the chronic typhoid carriers, we were able to cure a urinary carrier, a little girl of four years, by vaccination with an autogenous vaccine. We gave her nine injections before eradicating the infection. I regard this prophylaxic measure against typhoid (antityphoid vaccination), as one of the great advances that medical science has achieved in these late years that have been so full of far-reaching discoveries. I wish to express again my appreciation of the paper that has just been read.

Dr. Geo. H. Evans, San Francisco: I would like to particularly emphasize one recommendation in this paper and that is the recommendation calling for the vaccination of nurses, doctors and internes. I would go further than that and would seriously recommend that the family physician urge upon his patients the necessity for typhoid vaccination. I have in my service at St. Luke's a nurse seriously ill with typhoid contracted in attendance upon one of my typhoid patients. The nurses in the training school have all been inoculated prophylactically. Regarding the negative phase I will present a personal illustration. I personally went through this inoculation a few months ago and one week after my second inoculation I presented a decidedly negative Widal. Fearing some mistake regarding the typhoid culture it was confirmed by a strain in use at the Presidio. About one month after there was a very strong and definite agglutionation, showing that in some cases there is a temporary negative phase following these inoculations. The question of immunity and the length of time of the immunity cannot, of course, be definitely decided at the present time. The whole question is too new.

Dr. René Bine, San Francisco: Not only is the author of this paper to be congratulated but the Society owes him a debt of gratitude for having brought before it his experiences in this work. The tremendous work of the Army Medical Corps along these lines is not appreciated by many of our members and unfortunately we as individuals cannot enforce such prophylactic measures as can be done in the army. It must be remembered that even in the army, however, no soldier has been, so far as I am informed, vaccinated against his wishes, and in view of the fact that reactions are seldom severe, soldiers are rather glad to get the period of rest necessitated by the routine of vaccination and observation following. My own experience with typhoid vaccination is limited to six cases—all persons exposed to the disease. No severe reactions occurred. The benefits to be obtained with typhoid vaccines in treatment of the disease, as has been stated, are rather uncertain. There is no uniformity in the doses recommended, some advising one million bacilli or less, others hundreds of millions. I have employed them in but two cases; in the first I thought I did some good, whereas in the second I am not sure that the vaccine did not slightly prolong the disease. Everybody has seen cases run such atypical courses as to realize the difficulties in estimating the results with such medication.

Dr. D'Arcy Power, San Francisco: To my mind the greatest value to be derived from Major Brooke's paper would be in getting its facts prominently before the public. In an editorial in the State Journal I attempted to do this some months ago and I believe that there is no field of experimental medicine which would be so readily understood and at the same time so helpful to establishing a right understanding on the part of the public of the value of medical research as a clear statement of what has been achieved and is yet possible by typhoid vaccination.

Dr. A. S. Lobingier, Los Angeles: I presume that typhoid fever is supposed largely to be a condition which interests only internists but any one who has had typhoid will recognize that it is a question of great importance to all. I do not know of any disease of acute character which will leave more evidence of impairment. I think the laity is very erroneous in believing that typhoid will benefit an individual. Typhoid very seriously complicates the gastro-intestinal tract. The fact that 80 or 85 per cent. of the pathological conditions are direct result of typhoid shows that it is a question of mortality.

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THE TUBERCULIDES AS OBSERVED IN SOUTHERN CALIFORNIA.*

By RALPH WILLIAMS, M. D., Los Angeles.

When, at the solicitation of Dr. Anderson, the author agreed to write a paper with the above title, he was under the opinion that it would be very easy to secure all the necessary data, in relation to the prevalence of the various manifestations upon the skin which the tubercle bacillus or its toxins may give rise, to render it of some value to you, and particularly to dermatologists in other portions of the country. However, in seeking this information from various members of the profession whom one would naturally expect to have come in contact with many cases, the author finds that their records have not been sufficiently accurately kept or have been otherwise lost or misplaced, as to render anything like a complete analysis possible. Consequently he will have to draw largely, if not entirely, upon such as have passed under his own observation either in private practice or at the dispensary of the Medical College of the State of California in Los Angeles, at which, either under its present name or its old one (the College of Medicine of Southern California), he has been in active and fairly constant attendance since 1893. The records of this institution also have unfortunately been displaced in part and are not strictly available for the purpose under consideration. You can readily see from the foregoing that most of the paper is an explanation and an apology.

One would naturally suppose that in Southern

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California where countless thousands have come for tubercular conditions of the lungs, that diseases which are closely associated with pulmonary tuberculosis, both in its active and its hereditary influences, that lupus vulgaris and tuberculosis cutis would be comparatively common in those who have sought our climate and its benefits, and particularly in their offspring. However, the tuberculides, as I have seen them, are comparatively rare. By rare, I mean that I do not suppose, from what I have been enabled to learn, that they are any more common here than elsewhere. Certainly we do not see such mutilating and far-reaching effects of these lesions as are commonly reported, photographed and under treatment upon the European continent and in England.

In an article of the author's, published in 1897, in analyzing twelve hundred cases of skin and venereal diseases, excluding syphilis, there were six hundred. Of these lupus vulgaris constituted three cases and tuberculosis cutis ten cases, showing a predominance of the latter over the former, which is perhaps the inverse ratio of other localities, and yet in the author's own private cases, out of some forty patients with one or the other of these lesions upon the skin, the ratio is reversed and lupus becomes the most common with some twenty-five cases and the tuberculosis cutis the remainder. My friend, Dr. Bancroft, of Los Angeles, had occasion in his connection with the public school department to inspect fifteen hundred school children, in only one of whom was there any condition upon the skin which might be attributed to a tubercular origin. This child presented a small patch of cutaneous tuberculosis. In the children's hospital in Los Angeles there are not at present any cases of either of these diseases. I was unable to get definite information in regard to the Catholic Orphan Asylum, where there are many more children than at the hospital.

In this article lupus vulgaris will be considered as a separate and distinct disease, not because of a separate origin, but because of its ancient and definite clinical manifestations which have been described many years previous to the discovery of the tubercle bacillus, and hence will probably for many years to come be classified as a clinical entity. We will not consider extensively either the clinical appearance or the histopathology of lupus or of cutaneous tuberculosis, since some of these are to be discussed in other papers.

Practically all patients with lupus vulgaris that have passed under the author's observation have been of mature years, since as you know the disease commonly begins in childhood or early youth and lasts indefinitely: it was the absence of lupus in children which first attracted attention and led to such investigation as has been made. The characteristic apple jelly nests have been present in all cases and it is due to their presence, together with the fact that in tuberculosis cutis they are usually absent and that in the latter disease its history frequently dates back only a few months or years, that the distinction is made for present purposes in this paper. Most of the patches that it has been necessary to destroy have been less than two inches in diameter, and the author only recalls two patients, both of whom were children and victims of lupus since early childhood, who presented at all the mutilated, scarred and superficially ulcerated appearance the photographs of which we see in our text-books. It is perhaps in dealing with such extensive lesions that foreign authorities do not consider several months or a year of time more than necessary to cure lupus, whereas the author, whose experience has been with the smaller and perhaps less malignant types of the disease, considers that the X-ray and the Finsen light treatments are absolutely a waste of time, particularly the latter, where, as you know, that in the Finsen Institute patients return day after day for hour after hour of treatment through months and months of time. The X-ray he has only found useful in such locations as the inner side of the nostril and particularly the eyelid where other and more active preparations cannot be safely used.

Tuberculosis cutis has occurred sufficiently often to be of distinct interest to all dermatologists and to a certain extent to other members of the profession. The type which has most commonly come under the author's observation has been undoubtedly a direct infection upon some vascular region, such as the lip, the side of the nose, or the cheek, and while the patient never considers the ulcer to be due to its real cause until explained, he has nearly always given a history of traumatism preceding the formation of the ulcer. Scratches by cats, razor cuts, any little break in the skin which after the appearance of the ulcer the patient in his mind goes back to some perhaps trivial incident or injury in that region; and yet following this clue one can usually find that at this or some similar time the patient has been in rather intimate contact with a tubercular individual, or he himself presents signs of pulmonary tuberculosis.

Consequently we have here a lesion appearing frequently after maturity and presenting various sizes, one or more plaques, usually one, of partly ulcerated and partly healed lesions of tuberculosis. The crusts are usually dark from an admixture of blood, thin and adherent, which when removed causes a fairly free oozing of the blood from the soft, ragged granulations beneath, and especially about the edges. The center of the crust is often free and partly floating in the shallow pool of pus covering the yellowish, worm-eaten base of the ulcer. The edges are more tender than the center; they are purplish in color and undermined, and are unhealthy and indolent notwithstanding the apparent freshness of the torn granulations.

If it is a group or patch of lesions, there will be soft scars in places and the bridges of healthy skin and tunnel sinuses as before mentioned. If the origin of the lesion is from a subcutaneous infiltration of tubercular masses, the scars are thicker and do not yield to tension, and when numerous as on the leg or arm, may cause a permanent deformity in limiting motion of the member. Usually these lesions are single, about

the size of a quarter, and situated most commonly about the face. They are susceptible of rapid and easy destruction and permanent cure by removal in various ways.

In the years that have passed, the term scrofuloderma was used to designate, as the author understood it, a peculiar constitutional diathesis of children born of tubercular parents, who carried upon their skin some signs of this disease. For practical purposes it embraces two forms, viz: lichen scrofulosus and the strumous ulcer. The first is not a true tuberculosis of the skin; at least, I do not think the bacilli have been found in the lesions, but the disease is practically confined to these subjects. It appears in the form of yellowish red papules a little larger than a pinhead. Later they fade in color, taking on a more dead-like brown, and when the papule disappears, leave a small stain of increased pigmentation. These papules are either single or in groups, slightly conical, and some even flat on top with a small scale attached. They are found chiefly around a hair follicle on the side of the neck and chest, in boys chiefly, from ten to seventeen years of age. The hair is often destroyed and a small pigmented scar remains. They itch but little and no scratch marks are seen as in eczema, neither are there any scales, as in lichen ruber and the punctate form of psoriasis. They are not angular, neither do they have the violaceous tint of lichen planus; but swollen glands, strumous ulcerations and the general health of the patient mark the hereditary type.

The Strumous Ulcer. This is not primarily a disease of the skin, that organ being affected secondarily by the extension of the disease from some subcutaneous focus, the most common manner being the softening and destructive ulceration of a tubercular gland making its outlet to the free surface. The slow process of the inflammation causes an adhesion of the gland to the skin and the entire mass becomes doughy, gets red, then purplish, then ulcerates. Secondary infection follows and the abscess secretes freely, while the skin edges of the sinus have no vitality and the tubercle infection spreads, usually in several directions, causing a type of tuberculosis cutis. Where, however, the skin is affected by the ulceration of an independent tubercular nodule or infiltrated mass instead of a gland, the resulting lesion is somewhat different. Here you have also the indolent purple edges, but the ulcer is not so deep, there is not much discharge. There may be many openings upon the skin which is undermined. The edges of the ulcer are ragged, with a grayish, worm-eaten base, and bridges of skin, sometimes healthy, lead from one opening to the other, under which probes may be passed. It is tender and bleeds easily. From the tubercular osteo-myelitis the sinus is usually single, except in very old cases.

While lupus vulgaris and tuberculosis cutis rarely affect the general health except when extensive in childhood, many of these patients are supposed to ultimately die of tuberculosis. This percentage is difficult to ascertain, and yet it has not been infrequently reported that a sudden exacerbation of the process in the lupus patch has been followed by general tuberculosis and death.

Tuberculosis Verrucosa Cutis: In this form the usual manifestations have been upon the hands or in one case the sacral regions,—most commonly the former, and in three cases out of five in the author's observation, they have been situated upon the thumb, affecting the dorsal surface. They presented the hypertrophied villous elevation with very scant secretion, more or less scarring and clearing in the centre; the edges alone partaking of active cell proliferation. These lesions are usually dryer and more indolent than any of the types of tuberculosis cutis, and in their destruction it is frequently necessary to go somewhat deeper with whatever agent employed than in the others.

Tuberculosis of the mucous membrane has been very rare, from the author's experience, so far as their limitation has been to the lips and to the mouth. They appear about the lips as shallow, jagged, very superficial, worm-eaten ulcerations, not crusted, the floor looks granular and a dirty yellow. This yellow is caused by the miliary tubercles mixed with fat granules, especially in the lips. Sometimes you may see the pure tubercle, previous to ulceration, upon the lower lip as if studded with jelly white miliary masses glistening through the mucosa.

The tongue is sometimes affected, but here the edges are harder and more painful. When they occur about the mucous membrane of the genital organs, particularly in women, they tend to crust, a thin, greenish black scale or film being formed; they bleed easily and are more painful than any other form of tuberculosis of the skin. The anterior pillars of the fauces have been affected in several of the author's patients, and particularly a small area well down and in front of the tonsil towards the base of the tongue, presenting a partly glazed, partly ragged, grayish ulceration, far more tender than syphilis and creating a sensation of a foreign body and a constant desire to swallow. In several of these patients of this particular type there has been a mixed syphilitic infection, but the presence of tuberculosis pulmonalis, extreme tenderness and pain and failure to yield upon syphilitic treatment, have rendered them in his mind of tubercular origin.

While this paper is not supposed to deal with the treatment of these lesions, the author would remind you that any application or any method of treatment which irritates and does not destroy the diseased tissues is detrimental to the cure of the disease; that the great majority of the patients may be cured where the configuration and location of the lesion permit, by the use of such destructive chemicals as are used for superficial epithelioma, by the use of the sharp curette followed by the actual cautery, by the use of carbon dioxide snow, and even in many instances by the prolonged use and constant contact of a strong mixture of salicylic acid and creosote, or with the X-rays for such lesions as occur about the eyelids or the lips.

THE INTERRELATIONSHIP BETWEEN THE MOTOR AND SECRETORY FUNCTIONS OF THE STOMACH.*

By R. S. LAVENSON, M. D., Los Angeles.

Until within very recent years the motor and the secretory functions of the stomach were looked upon as distinct processes more or less independent of each other. The work of Cannon, Tobler, O. Cohnheim, Grutzner, Prym and others has, however, shown these two functions to be closely related and in fact to be mutually dependent upon each other. I believe, nevertheless, that the interrelationships between the secretory and the motor functions of the stomach when either one of these functions is disturbed, are not generally understood and their significance in gastro-intestinal medicine not fully comprehended. It is for these reasons that I beg to present to you some of the more important features in the relationship between gastric secretory and motor functions.

Since a proper understanding of the relationship in pathological states is possible only if the normal functions are well understood, I shall beg your indulgence while I briefly review the mechanism of the normal pyloric reflex, for it is through the medium of this reflex that most of the secretory and motor functions of the stomach find a relationship.

Normally when food enters the stomach the pylorus closes and remains closed until a favorable amount of acid gastric juice has collected in the pyloric antrum, when it opens and permits the acid contents of the antrum to pass on into the duodenum. We thus see that an acid reaction on the gastric side of the pylorus and an alkaline reaction on the duodenal side causes the pylorus to open. When now the acid contents of the pyloric antrum arrive in the duodenum the pylorus at once closes. This occurs regardless of whether the reaction on the gastric side of the pylorus is alkaline, neutral, or acid. We see, then, that an acid reaction prevailing on the duodenal side of the pylorus, regardless of the reaction on the gastric side, causes the pylorus to close. The arrival of the acid contents in the duodenum has another effect. Through the medium of the hormone, secretin, it causes a flow of pancreatic juice. This juice, alkaline in reaction, assisted by the alkaline bile, and *succus entericus,* neutralizes the acidity of the contents recently arrived in the duodenum, and soon the reaction in the duodenum again becomes alkaline, whereupon the pylorus opens. We thus see that when an acid reaction prevails in the duodenum, the pylorus closes, and when an alkaline reaction prevails the pylorus opens. On the other hand, an acid reaction in the stomach is conducive to opening of the pylorus and an alkaline reaction to its closing. The reaction prevailing in the stomach is, however, entirely subordinate to the reaction in the duodenum; when the reaction on both sides of the pylorus is the same, that on the duodenal side determines the action of the pylorus; when the reaction on both sides is alkaline, the pylorus opens; when it is acid on both sides, the pylorus closes.

In discussing the interrelationships in disturbed gastric secretion and motility, we shall consider first, those conditions in which secretion is primarily disturbed, the acidity either increased or decreased; those conditions in which the motility is primarily disturbed—that is, in which for some reason independent of the gastric or duodenal reactions, the pylorus is permanently or spasmodically contracted or tends to become too greatly relaxed. Finally we shall discuss those conditions in which the propulsive powers of the gastric wall are either too powerful or too weak.

To take up first those conditions in which there is excessive gastric acidity, it is hardly necessary for us to consider the question of whether a gastric juice of more than normal acidity is secreted or more than the normal amount of juice of the normal acidity. The resulting condition is the same, an acidity of the mixture of foodstuff and gastric which is greater than normal. We have seen that when a portion of the gastric contents of normal acidity arrives in the duodenum it causes the pylorus to contract. A similar portion of excessive acidity would not only cause a more powerful contraction of the pylorus, pyloric spasm, but, on account of the fact that it will take the alkaline duodenal contents longer than normal to alkalinize these contents of excessive acidity, the pylorus will remain closed for a longer time than normal and the emptying of the stomach will be proportionately delayed. Both of these conditions, pyloric spasm and delayed emptying of the stomach, are frequent clinical manifestations in primary or neurotic hyperacidity. There are those,[1] it must be mentioned, who claim that pyloric spasm does not occur in simple hyperacidity and that its occurrence is indicative in all cases of the existence of gastric ulcer. I believe, however, on the basis of clinical observation and therapeutic results, that pyloric spasm does occur as a manifestation of hyperacidity.

It may be that the constipation so frequently observed in hyperacidity stands in some relationship to the delayed gastric motility, though in just what manner we do not know. On the other hand, we occasionally do find a marked tendency to diarrhea in hyperacidity, probably as a result of the irritating action of the excessively acid gastric contents on the intestinal mucosa.

Let us consider next the gastro-motor disturbances resulting from an insufficient secretion of acid. We have already learned that it is the arrival of the acid gastric contents in the duodenum that effects the closure of the pylorus. If the stomach secretes no acid or only a deficient amount of acid, the natural stimulus to the closure to the pylorus is wanting and the gastric contents are thus allowed to pass more or less uninterruptedly into the duodenum. This rapid emptying of the stomach is a phenomenon of great importance in anacidity and *achylia gastrica.* It is in fact so important that its absence in the presence of a complete anacidity is strongly suggestive of the exist-

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

ence of some obstruction, usually of a malignant nature, involving the pylorus. I distinctly recall two instances in which a delayed emptying of the stomach in the presence of an *achylia gastrica,* first strongly directed attention to the probability of the existence of carcinoma of the pylorus, a condition that was subsequently found to exist in both instances. It is in all probability this rapid discharge from the stomach into the intestines of food masses unfitted, thermally, physically and chemically, for intestinal digestion that produces the diarrhea so frequently encountered in non-malignant *achylia gastrica.*

The conditions in which the pylorus, by reason of either structural or functional derangement, serves as a source of obstruction to the free passage of contents from the stomach into the duodenum, are numerous. The more important are benign stenosis, intestinal and biliary disorders, gastric ulcer, and various gastric neuroses. The influence upon secretion of such an organic or functional obstruction is observed in the gradual accumulation of more and more gastric juice after the ingestion of food, resulting in a hyperacidity or a digestive hypersecretion, a condition well expressed by the term "obstructive" hyperacidity or hypersecretion.

I have for some time, as a result of several cases which came under my notice, entertained the belief that cases of gastric ulcer in which the ulcer is located near the pylorus are especially accompanied by this tendency of the pylorus to go into spasm, and that these may consequently be the cases of gastric ulcer in which hyperacidity is a prominent symptom. At my suggestion some statistical observations are at present being made upon this point, and I hope before long to be able to report upon it.

A primary lack of tone of the pylorus is a condition of which we know but little. It has been described in cases of rigid pylorus where there was both stenosis and insufficiency. In such cases, the effect upon secretion will depend upon whether the stenosis or the insufficiency is the predominating motor disturbance. Frequently the pyloric atony is associated with a general gastric atony and here again the secretory picture will depend upon the seat of the greater motor disturbance. When atony of the pylorus exists unassociated with general gastric atony, the same secretory disturbances will result as occur in the next condition to be discussed, excessive activity of the propulsive gastric musculature without pyloric stenosis, for it can be readily seen that the same mechanical effect upon the gastric contents must ensue when an atonic pylorus with a normal propulsive activity exists as occurs when there is a normal pylorus and a hypertonic propulsive mechanism. In each case there is a balance of power in favor of the propulsive mechanism.

The influence that these two motor abnormalities have upon secretion is both intricate and interesting. To completely understand this condition it must be recalled that the gastric acidity as we ordinarily determine it, is the resultant of the mixture of a certain amount of ingested food with a certain amount of gastric juice. Let us assume that normally the gastric acidity results from the admixture of, say four units of ingested food with four units of gastric juice. The four units of ingested food are introduced into the stomach within a comparatively short space of time. If immediately upon introduction of this material into the stomach, an excessive propulsive activity commences to move the gastric contents in unusually large quantities into the intestines, what results? A considerable portion of food, say three out of the four units, is moved on into the duodenum. As yet, however, very little acid has been secreted. The stimulus has been delivered for the secretion of four units of gastric juice, but only a small portion, say one unit, has been secreted by the time the three units of the food contents have been passed on into the intestines. What results? We shall have remaining in the stomach but one unit of foodstuff and three units of acid, gastric juice. If now the stomach tube is passed and some of the contents removed and analyzed, its acidity will be found to be excessively high and, though only the normal total amount of acid juice was secreted, a hyperacidity will naturally be diagnosed.

We thus see that we may have hyperacidity resulting from two entirely opposite conditions—stenosis of the pylorus and insufficiency of the pylorus. In one particular, however, these two hyperacidities differ. In the case of stenosis or spasm, the percentage acidity and also the total amount of acid is increased; in insufficiency the percentage acidity is increased, but the total amount of acid is normal or decreased. For this reason, Schutz [2] claims that in all cases of hyperacidity we should determine not only the percentage but also the total acidity. There is no doubt that his claim is thoroughly justified. Though a percentage hyperacidity exists in the two conditions, they differ absolutely in nature, and unless they can be differentiated on the basis of other phenomena, this must be done by means of an estimation of the total acid.

Discussing finally the secretory disturbance in gastric atony, that condition in which the gastric propulsive power is deficient, it must be noted that in a large percentage of such cases there is some secretory disturbance caused by the same factor as induces the atony. If, however, atony occurs unassociated with primary secretory disturbance, the same mechanical interference with the movements of the gastric contents occurs as does in pyloric spasm or stenosis—the balance of power is in favor of the pylorus and a collective hyperacidity or hypersecretion results.

Finally it must be remarked that there are abnormalities of motility and secretion in which no laws of relationship or mutual dependencies can be observed. These are conditions in which the central control of the gastric functions has become abolished, such as the so-called "Chorea of the Stomach" of Leven [3] or the "Pyloric Arrythmia" of Hausmann.[4]

Summarizing the foregoing remarks as well as possible, I should say:

1. That secretory disturbances of the stomach usually induce motor disturbances through the medium of the pyloric reflex.

2. That motor abnormalities of the stomach usually induce secretory disturbances through interference with the mechanism of the propulsion of the gastric contents from the stomach into the duodenum.

3. Hyperacidity or hypersecretion induce pylorospasm and delayed emptying of the stomach.

4. Hyperacidity and achylia gastrica induce a rapid discharge of gastric contents into the duodenum.

5. Pylorospasm or pyloric stenosis induce hyperacidity or hypersecretion, which conditions may be well described by the terms "Obstructive Hyperacidity" and "Obstructive Hypersecretion."

6. Insufficiency of the pylorus and hyperactivity of the propulsive gastric mechanism induce hyperacidity.

7. Gastric atony frequently induces hyperacidity or hypersecretion, which conditions may be well described by the terms "Collective Hyperacidity" and "Collective Hypersecretion."

8. Hyperacidity may result from a spastic or stenotic pylorus, from an insufficient pylorus or from gastric atony. In stenosis or spasticity of the pylorus and gastric atony, the hyperacidity is accompanied by an increased total amount of acid. In insufficiency of the pylorus the hyperacidity is accompanied by a normal or decreased total amount of acid.

9. In determining the motor disturbance responsible for a hyperacidity, it may be necessary to determine the total amount of acid secreted.

Discussion.

Dr. R. L. Wilbur, San Francisco: The only thing I want to call particular attention to is the matter of getting the total acidity of the entire contents of the stomach instead of testing for it in a few cubic centimeters as is ordinarily done. I think our conclusions are often very unsatisfactory where we do not test for the total acidity by one of the methods where the stomach is washed out carefully and the acidity of the washings, together with that of the original contents noted.

Dr. T. W. Huntington, San Francisco: Having had frequent opportunity to study living pathology as seen upon the operating table, I am impressed with the fact that, in spite of all our special and official aids and in spite of the knowledge which comes to us through the chemical laboratory, we are often unable to reach a final decision, without opportunity of ocular inspection of organs involved. We are enjoined to observe and observe; to investigate and investigate, but to these injunctions there should be added another word of significance; observe wisely and investigate wisely. There is a danger lest in our enthusiasm for laboratory and clinical study of the patient we let pass the golden opportunity for radical intervention. I question the propriety of protracted study of the patient who presents an early clinical history of gastric cancer; nor do I believe there should be long delay when confronted by tolerably complete evidence of pyloric stenosis. In a word, the most interested person, the patient, has a right to know, very early, whether he can escape impending death, or be relieved from a long period of invalidism through surgical intervention.

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2. Arch. f. Verdaunngskrank, 1911, xvii, 2, p. 119.
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ORBITAL ENDOTHELIOMA—REPORT OF CASE.*

By P. A. JORDAN, M. D., San Jose.

On August 16th, 1911, there came under my care Mrs. J. O., aged 55, complaining of intense left-sided neuralgic pains. She was a perfect picture of chronic intense suffering, with pinched face, subdued voice, and demeanor resigned to suffering. She was willing to undergo any form of treatment, or any surgical procedure, provided it gave the semblance of a promise of even a little relief. She gave a history of having been treated by many physicians, surgeons, and specialists, since her trouble began, four years ago.

On examination I found the following: O. D. good vision; O. S. totally blind for one year; T—N, vitreous cloudy. Fundus not clearly seen. Nose—right nostril, O. K., excepting septum, bulging to right, in ethmoid region. Left nostril—complete impaction of middle turbinate against septum.

Without a complete history, at the time, I suggested the removal of the middle turbinate, and sufficient amount of the ethmoid body to warrant freedom from pressure, expecting relief from the neuralgic pains. This was done by Dr. Swaze, at my suggestion. On December 1st, I, for the second time saw this patient. The middle tubinate had been removed, the pressure relieved, but the intense pain was as severe as ever, and the patient was taking three grains of morphine per day. Owing to peculiar family relations, it was impossible to give the patient proper care at home, and difficult to transfer her to a suitable hospital. At this juncture I urged transference of patient to San Francisco, where neurologist, brain surgeon, eye, ear, and nose specialists might all work together to unravel the interwoven symptoms. Soon after, the patient was taken thence, where the following operation was performed in Lane Hospital:

Under general anesthesia, an accommodating flap of about two and one-half inches in diameter was made in the fronto-temporal region, which should allow examination of the region at the apex of the orbit, by lifting up the frontal lobe, and also should allow removal of the Gaserian ganglion. No pathological findings at the apex, in the region of sphenoidal fissure; and an ineffectual attempt to remove the Gaserian ganglion was made. The orbit was then exenterated. In the apex was found a tumorous mass, filling about the posterior one-third of the orbit. There was found to be no bony wall between the orbit and nasal cavity. Microscopic examination showed the tumor to be endothelioma. The patient made an uneventful recovery, but still has very marked left neuralgic pains.

At the time of the operation, I learned an important point in the patient's history, not known to me before; namely, that early in the disease there had been marked proptosis of the left eyeball, with accompanying swelling and extreme pain. Some time later, after having visited San Francisco, she experienced a gush of fluid from the left nostril, with a prompt relief of pain, and lessening of swelling of the eye, which soon after

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

assumed its normal position. There was very likely at this time a tumor in the orbit, impaction of the middle turbinate and ethmoid body, closure of exit to frontal sinus, and retention of fluid in same. The gushing of fluid followed subsidence of swelling, and thus relief from pain.

I wish here to enter a kindly criticism against the manner in which this and similar patients have been handled. Is there not here a suggestion of lack in the co-operation of brain surgeon, neurologist, rhinologist, and ophthalmologist? Had these different specialists each done their duty in complete harmony with every other one, in my judgment, this patient would have been saved two or three years of intolerable suffering, by an early and correct diagnosis, followed by correct treatment. (Patient exhibited.)

Discussion.

Dr. P. de Obarrio, San Francisco: It seems to me evident from the history of the case that a lack in proper examination of the patient has been the cause of a faulty diagnosis, and the lack of a proper diagnosis has been the cause of what I consider to be a disastrous treatment. In these cases there is no reason to lose the eye. The tumor could have been enucleated without the necessity of this eye being lost. Larger tumors than this one have come out and the eyes have not been lost. I have presented to the San Francisco County Medical Society on Jan. 23rd, 1912, the report of just such a case. The question of exophthalmus has undoubtedly not been taken into consideration in this case. The moment there is an increase in the volume of the tissues of the orbit there must be exophthalmus and the direction of this exophthalmus will show the location of the tumor and such investigation was not done. It seems to me that there should have been a co-operation between the surgeon and the specialist in this case and it is certainly up to the specialist to furnish information to the general surgeon if he abstains from interfering.

Dr. Cullen F. Welty, San Francisco: When a brain operation is contemplated on a case that has had cerebral manifestations for a long period, every available measure should be used in perfecting your diagnosis prior to operation. In such a case as the Doctor reports it is almost criminal negligence to do a brain operation without having the eye findings. Had this examination been made, the patient would not have been subjected to the brain operation.

Dr. Harrington B. Graham, San Francisco: I saw the operation upon this patient and one thing that impressed me was the way the sphenoid was reached. Dr. Stillman had no trouble in taking out the anterior wall of the sphenoid from the orbit and I make mention of this in a later paper. Another interesting thing that I noticed was that there was no inflammation of the ethmoids. It is easy to criticize after you have the pathological condition given you as this case has demonstrated. The probabilities were in this case before operation that it was an intra-cranial growth. I am not enough versed in the diagnosis of retro-orbital growths to be competent to criticize Dr. de Obarrio's statements. I know something about intra-nasal growths and I know that Dr. Welty is entirely wrong. I examined the patient intra-nasally and found no evidences that the ethmoids were involved at the time of the operation, so Dr. Welty's remarks are unnecessary. The operation was done by Dr. Stillman with as complete a knowledge of the case as I think could be obtained. I do not think that Dr. Stillman should be criticized so severely for undertaking an operation which in his judgment was indicated at the time. When he found the growth was not an intra-cranial growth he did the next best thing and I think he is justified in that.

Dr. Geo. W. McCoy, Los Angeles: With diagnosis of malignant tumor in the orbit back of the eyeball, the sacrifice of the eye ought to be made, as these growths are so prone to recur. So in this case I think the removal of the eyeball was imperative, especially as sight was gone. In such cases if operative procedures are undertaken I think they should be radical.

Dr. P. A. Jordan, San Jose: In the first place I wish to clearly establish my own position with relation to the patient. I had seen the patient but twice prior to the time of operation and at both these visits I was only consultant. My hands were tied because of the peculiar home surroundings of the patient. All my dealings with the case were during the last 6 or 8 months. From stories I have gathered from the patient and other sources it would seem that 3 or 4 years ago when the trouble began, there was some trouble present in the ethmoid region pushing the middle turbinate against the septum, closing the exit of the frontal sinus, with all the pain accompanying that such conditions might cause. At this time the physician who had her in charge should have found the nasal trouble at once and should have operated and this should have led him to locate the tumor whether ethmoidal or orbital. It may have originated in the ethmoid or it may have originated in the orbit. At any rate no bony wall separated nasal and orbital cavities at time of last operation. With this as the starting point it seems to me that the trouble should have been traced to its origin and removed. The patient would thus have escaped 3 or 4 years of intolerable suffering. I criticize myself for not having gotten more deeply into the truth of the matter, but the handling of the case was difficult as the family surroundings were such that I could not get control of the case and it was difficult for the specialist, the neurologist and the general surgeon to properly work together.

A REPORT OF TWENTY-EIGHT CASES OF TROPICAL ABSCESS OF THE LIVER.*

By REA SMITH, M. D., Los Angeles.

Abscess of the liver is so serious a complication and so frequent a termination of amebic dysentery, that I have taken the liberty of bringing before you the following report of twenty-eight cases of liver abscess that have occurred in our practice in Los Angeles during the last ten years. One of these cases developed in Goldfield, one at Mojave, one in Arizona and the remaining twenty-five came from Mexico for surgical treatment after the disease had been diagnosed and the patient referred to us by the local physician.

Of these cases, one had a spontaneous cure by discharging through a bronchus following rupture through the diaphragm. The rupture occurred on board the train while en route to this city and he was sent directly to the hospital, coughing and expectorating liver pus.

One died of rupture into the lung before he could be moved to a hospital after being first seen by me, and two were moribund when admitted and died before any surgical relief could be afforded.

Two patients had early acute infections with

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enormously distended livers and a great deal of thin bloody fluid. They were both operated upon in extremis; one died the day of the operation, one four days later.

One patient was operated upon in the face of general peritonitis, which had followed aspiration of the liver, in the country, before he came under our care. His abscess was drained, but the peritonitis was not affected thereby, and he died on day following the operation.

Of the remaining twenty-one cases of abscess seen between the initial acute infection and the terminal stage, 4 died and 17 recovered. A mortality of about 19% for the 21 cases, and mortality of 29.16% for the series of 24 cases operated upon. Two of these patients died of amebic abscess of the lung, one 6 weeks, and one 2 months after operation. These abscesses were metastatic with no perforation of the diaphragm. At autopsy in both cases the liver abscess was found to be a sinus the size of the tube, the cavity in each being healed.

One patient died of starvation from a duodenal fistula which developed several days after operation and was probably due to pressure necrosis produced by the drainage tube, which was necessarily placed well back on the inferior surface of the liver as the most favorable point for opening.

One died of pulmonary hemorrhage in a lung abscess that had been present at the time of operation. This patient had been under observation for some weeks, with lung abscess following rupture of liver abscess into the lung, and as he continued to lose ground we drained both liver and lung abscess through the liver. His condition improved markedly for about two weeks, at which time he had a fatal hemorrhage, demonstrated at autopsy to be from a vessel in the lung.

Clinically these cases fall naturally into two groups.

First: Those with a large quantity of pus developing in the lower segment of right lobe, and pointing downward, with the liver adherent to the abdominal wall below the margin of the ribs. The indication for opening at this point is obvious and the procedure extremely simple. Two of this series fall in this group and both had uninterrupted recoveries.

Second: Those with an abscess confined to the liver, with the liver movable; 19 of this series fall in the 2nd group. In all of these cases we opened the abdomen without the preliminary use of the exploratory needle, located the abscess by palpation, and arranged for free drainage at the most accessible point. We found all of these abscesses high in the right lobe, many of them lying close to the diaphragm, with the one exception mentioned, followed by a duodenal fistula. Unless the liver was adherent at some point to the peritoneum, we treated them by removing the 9th and 10th costal cartilages at the upper angle of the abdominal incision, stitching the parietal peritoneum to the liver and allowing an interval of 48 hours for adhesions before opening the abscess. If the liver was found adherent firmly to the peritoneum, the point for drainage was easily located from within, and the abscess immediately opened by an incision opposite this point, with the removal of a section of rib. In one case, we removed a section of rib, opened and sewed off the pleural cavity, split the diaphragm and drained the abscess without post-operative complications.

We have had no instance of peritoneal infection following the abdominal exploration, and we have gained a positive knowledge of the location and the extent of the abscess, which has made it possible to complete the operation, to open and drain the abscess with safety. The only case of peritonitis that we have seen, was the one reported, following the introduction of a needle between the ribs for diagnostic purposes, before coming under our care.

With a hand in the abdomen, the abscess in the liver can always be detected by a characteristic induration of the liver tissue overlying it, with or without fine adhesions to the parietal peritoneum, depending upon the depth of the pus from the surface. Following the incision and exploration (with the whole hand lying flat upon the liver) the field can be isolated with gauze and the abscess aspirated, as the needle is withdrawn, a small gauze trailer packed down to the wall will prevent leakage and preserve a track to the abscess for future guide. The lower end of the wound can then be closed and the field protected with gauze for immediate drainage, or the peritoneum of the upper angle of the wound can be loosened from its abdominal attachment and sewed down to the liver and the wound closed, with the exception of the exposed patch of liver; 48 hours later, the abscess can be opened with long forceps, without anesthetic.

It is to be remembered that the wall of an old liver abscess is very hard and very thick and extremely difficult to penetrate with a blunt instrument, and until such a membrane has been penetrated, the abscess has not been opened. We have never had any bleeding that a gauze pack would not control, even when 5 or 6 inches of liver tissue had to be traversed before the abscess was encountered. The pus is very thick and the caliber of the drainage tube must be large and the walls heavy enough to withstand a good deal of pinching at the point of entrance into the abscess cavity. I prefer the two stage operation whenever possible, because by isolating the small area of liver overlying the abscess from the general peritoneal cavity, it is possible to do away with the large gauze packs and the resulting tedious aftermath of a large infected wound, although I am sure that the general cavity can be protected with gauze and the abscess opened at the time of the original operation with safety to the patient. We have done this whenever a spot on the liver overlying the abscess could not be stitched to the parietal peritoneum.

We have not encountered the difficulty so often described in stitching the peritoneum to the liver, since we gave up trying to bring the liver up to the wound. If the peritoneum be loosened from the fascia for a distance of an inch or an inch

and a half around the margin of the wound, its edges will drop down upon the surface of the liver without tension, and a few catgut sutures will hold the two surfaces together without danger of cutting through the liver tissue. Enough pus can be removed with the aspirator after isolating the field, to relieve the tension and the urgent symptoms, and at the end of 48 hours the liver and peritoneum will have become so firmly adherent as to stand all the manipulations necessary to open and drain the abscess.

We have had none of these patients complain of pain during this second step of the operation, except at the actual time of penetrating the abscess wall, and we have not found it necessary to give a second anesthetic in any case.

To my mind the greatest danger to these patients lies in the tendency of the abscess to perforate through the diaphragm, or for the infection to be carried either by the blood stream or lymphatics to the lung, with the formation of a secondary lung abscess. A cough developing in the course of liver abscess should be an indication for immediate operation, unless it can be attributed plainly to causes other than a beginning lung involvement secondary to the liver infection. Both of our cases of lung abscess following drainage of the liver, had persistent cough and blood tinged sputum with râles at the base before operation, and both died of slowly progressing abscess of the right lung. I am convinced that this complication can be avoided in spite of the close proximity of the lung to the abscess, if the patients are operated upon before the extension has taken place; by placing them in Fowler's position immediately after operation and maintaining this position until the abscess is healed. After the lung has become infected, we have not been able to stay the slow development of this process. An incision through the chest wall directly into the invaded lung in an effort to drain the abscess, in one case, was not successful, because the thick gelatinous contents of the abscess would not drain.

Only two cases of this series had diarrhea or showed ameba in the stools while under our care for the surgical treatment of the liver, although all showed ameba in the pus when the abscess was first evacuated. We were unable to demonstrate any other organisms in stained smears except in the case where a communication between the abscess cavity and the air passages had been made before the operation.

Among the 28 cases observed there was no instance of a double abscess in the liver itself.

Besides the cases of abscess reported, we have seen three cases which we believe to be amebic infection of the liver, recover without surgery. Rest in bed, continuous moist heat and diet being all that was necessary. These three cases seemed to be instances of the condition described by Leonard Rogers, as presuppurative amebic hepatitis.

In conclusion I would urge an abdominal incision rather than an exploratory puncture with needle in all cases of suspected abscess of liver. A negative result with the needle is of no diagnostic value, because of the depth of the abscess, in many instances, and the tendency of the needle to slide along beside the hard abscess wall instead of to penetrate, when inserted blindly. A positive result with the needle on the other hand, may be followed by peritonitis, if the needle be withdrawn, without the possibility of isolating the wound in the liver from the general cavity.

The high abdominal incision through the right rectus can usually be used for drainage as well as exploration; with the abscess high in the right lobe, the tube passing up and back drains the cavity from its most dependent point, especially if the patient be kept in Fowler's position when returned to bed.

Let me call especial attention to the fact that deep liver abscesses do not fluctuate, but can be detected with a hand on the liver surface, by a feeling of induration even through several inches of liver tissue, and that a large percentage of them develop from a focus high in the upper half of the right lobe, at such a point that perforation into the lung is the most probable termination, without surgical interference, and that the mortality of any surgical procedure is greatly increased, after the lung has become involved either by rupture of the abscess through the diaphragm or by extension through the lymphatics or blood stream.

Discussion.

Dr. W. V. Brem, Los Angeles: The first point of interest is that 28 cases of liver abscess should have occurred in the practice of one physician in Los Angeles and a second interesting point is that the majority of these cases came to him from Mexico. But a few of the abscesses did develop in the vicinity of Los Angeles. During the past six or seven months I have examined the feces of a number of patients who had amebas in the stools and who acquired them in or near Los Angeles. Amebic infection therefore does occur in that vicinity and the possibility of amebic abscess of the liver should be borne in mind. My experience with liver abscesses were gained in Panama. In Colon Hospital during the four years of my service we had about the same number of liver abscesses that Dr. Smith reported to-day—from 28 to 30. Dr. Smith's mortality was quite low. I think that is explained by the fact that his patients were probably in Mexico a long time before they came to Los Angeles, that is that they were the ones whose resistance was good enough to enable them to take care of the infection well. The others probably died during the acute stage and did not reach Los Angeles. The prognosis of course would be better in the former group of patients whose abscesses had reached the chronic stage with thick fibrous walls. Herrick, of Ancon Hospital, Panama, has classified liver abscesses into acute, subacute and chronic forms. The chronic are those with thick fibrous walls and the mortality is low in this group. In the group of the acute abscesses with thick necrotic walls and no fibrous tissue formation the mortality is high, and the patients die quickly with an extraordinary degree of intoxication usually on the second day after the operation. The condition does not seem therefore to be associated with any secondary infection. I do not know why they have such intense intoxication but one is tempted to think of a rapid absorption of some toxin from the necrotic walls of the abscess. I think Herrick's classification is very useful from the prognostic point of view. In diagnosis it is important too because the symptoms and blood picture in the

various stages is different. In the chronic stage the leukocyte count is considerably lower than in the acute stage and in the differential count the percentage of polymorphonuclear leukocytes is not so greatly above normal. In the acute stage you are liable to find multiple abscesses, while in the chronic stage the abscesses have coalesced or there was only one in the beginning. In Dr. Smith's series the two abscesses of the lung are also interesting. In all the experience in Panama (the number of cases reaching over 200) there were only two cases of abscess of the lung not connected by continuity with an abscess of the liver.

Dr. E. C. Moore, Los Angeles: The presence of amebiasis in the United States is more prevalent than we believe. In a recent conversation with some of my confreres in Los Angeles I learned that amebae had been found in from 20 to 30 cases. It is incumbent upon us throughout the United States to investigate this condition more than we have heretofore.

MECHANISM AND CLINICAL ASPECTS OF CHRONIC ARTERIAL HYPERTENSION.*

By R. L. CUNNINGHAM, M. D., Los Angeles.

In the human body the blood within the arterial system is normally under a pressure which varies, at the end of cardiac systole, from 110 to 125 mm. of mercury, as read by the ordinary sphygmomanometer from the brachial artery. This normal, or physiological, tension of the arteries is maintained chiefly by four factors,—(1) The force of the systolic contraction of the heart muscle; (2) The peripheral resistance in the smaller vessels; (3) The elasticity of the vessels through which the blood passes; and, (4) The amount of blood held within the vessels. Two accessory factors may be taken into account in addition to the four just mentioned,—the respiratory movements of the thorax, and the contraction of the skeletal muscles. Venous pressure is dependent upon arterial pressure, modified by certain other factors, and is not related directly to our present subject. We are here concerned with the matter of arterial tension alone, because that side of the circulation is the one most easily studied and also the one which probably gives us the most accurate knowledge of all the phases of the subject.

It is well known that the normal arterial tension varies for different individuals, and that it also varies, within certain more or less restricted limits, for the same individual, being affected by such habitual changes as rest and exercise, ingestion of food and starvation, sleep and mental excitation, etc. These are the so-called physiological variations, being common to all individuals, and they may be considered as without special clinical significance. On the other hand, when a variation from the usual becomes either permanent or very marked in degree, it can no longer be classed as "normal" or "physiological" and is then necessarily of clinical importance. Such "pathological" deviations are of two kinds: hypotension, a lowering of the blood pressure; and hypertension, an elevation of the blood pressure.

Physiological variations in blood pressure are always due to a transient modification of one or more of the factors mentioned above as controlling intra-arterial tension, and the active causative agent is usually readily discovered. Pathological variations are likewise due to modification of one or more of the same controlling factors, with this difference, that here the action is not merely temporary, but is permanent in its influence, and is not always so readily discoverable. Both classes of deviation in the direction of hypertension are, as a rule, purposeful and conservative. Hypertension has been studied less thoroughly and does not yet possess the clinical interest which attaches to the opposite change.

When does the term hypertension begin to be applicable? It is hardly possible to designate a definite line of demarkation between the normal and the abnormal pressure, but, in a general way, we are inclined to call any reading excessive when it passes 135 mm. of Hg. for we doubt the occurrence of a continued pressure above 130 mm. in a sound individual, it being understood that the normal reading for the instrument used is in the neighborhood of 115 or 120 mm. Obviously hypertension can not exist as an entity, and the discovery of its presence is but a step in the search for a deeper and underlying disturbance of which it is merely one manifestation, and yet we commonly attribute to it certain symptoms, on the ground that they are in large measure dependent upon the elevated pressure. Always the primary cause is one which has affected one or more of the fundamental factors enumerated at the beginning of this brief discussion. We shall therefore consider the accepted explanation for the occurrence of hypertension in a few of its more frequent clinical associations, and later we shall look for the effects of the condition upon those parts of the organism most profoundly influenced by the rise in arterial pressure.

It is undoubtedly in cases of chronic nephritis that we meet with the highest readings of blood pressure, and particularly in that form of nephritis which is variously called "interstitial," or "granular" or the "genuine contracted kidney." Probably everyone has found pressures of 300 mm. or even higher in this group, though lower readings are far more common. The hard pulse has long been recognized in its association with nephritis and was mentioned by Bright in his writings, though he gave no satisfactory explanation of its production or effect. In 1856 Traube gave the question the first special attention, but he erroneously concluded that the rise in arterial pressure was due to the fact,—not really a fact at all,—that in nephritis less fluid is removed from the body by the kidneys and the flow of blood thus impeded by volume, results in an increase in the pressure within the arteries. At a little later date it was suggested that the rise is to be explained upon a purely mechanical basis of obstruction, since the narrowing of a great many small vessels in the kidneys might offer sufficient impediment to the flow of blood to result in elevation of pressure even though the amount of fluid re-

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

moved from the blood were as great as normal. This view was overthrown by the observation that the complete ligation of both renal arteries was not attended by anything like a similar rise in pressure. At the present time the best opinion would seem to favor the following view: Injury to a number of glomeruli and taubles of the kidney causes a diminution in the excretion of the urinary constituents; these abnormal substances circulating in the blood act as direct stimulating agents to the muscle of the heart and more especially to the muscle of the arterial wall, with consequent narrowing of the lumen of the vessels and hypertrophy of the myocardium, both of which changes contribute to the elevation of the blood pressure. The elevation is essentially purposeful inasmuch as the resulting increase in velocity of the blood flowing through the kidney gives rise to an increased secretory activity in the undamaged portions of the renal cortex in compensation for the preceding destruction of other areas. In this we see why there is so often an actual increase in the amount of urine secreted by an injured kidney, and especially an increase in the water rather than in the solid constituents. As Struempell puts it, "The hypertension is a result of renal insufficiency." The progressive development of this condition may be observed in cases of acute nephritis, which lends support to the view described. Urea is no longer looked upon as the important, certainly not as the sole cause of this change.

Arteriosclerosis can not justly be called an affection in itself; it is rather a part of a more general process which attacks a number of organs at the same time, but certainly the arterial thickening may be the most apparent and even the most important change in such a general disease. Here we can aptly apply the same theory of "obstruction" in explaining the hypertension which is invariably present. It is further observed that those examples of arterial disease in which hypertension is most marked are those in which the vessels are of the fibrous type as contrasted with the calcareous type and it is in these cases that symptoms are most marked. Later the kidneys are sure to be involved and their loss of function then dominates the picture, so that a purely sclerotic form of hypertension is uncertain, and therefore unimportant as compared with that from other combined factors.

In diabetes and gout arterial degeneration has been given the place of first importance in most all explanations of the hypertension which exists, but the later tendency is to lay more stress upon the influence of abnormal metabolic substances with their toxic effects as being directly responsible for the changes in the vessel wall. Whether the injury is a direct chemical injury or one which acts indirectly through the nervous system is undetermined. Hepatic cirrhosis falls into the same class and general metabolic change is undoubtedly the most important point in this affection, though the apparent and often considerable circulatory obstruction in the liver may be a factor of some significance in its tendency to produce hypertension in the arterial system as well as in its better recognized effect upon the pressure in the portal circulation.

Whether the so-called idiopathic cardiac hypertrophy can result in a permanent rise in intra-arterial pressure without the existence of changes in the vessels and kidneys is problematical. Struempell favors the view that it may and often does, and he would give to this condition the position of a clinical entity, while most other authors would place it in that large group of conditions to which the name of "cardiovascular-renal" disease has been applied descriptively. In the athlete, and a few analogous individuls, we do find an increase in the blood pressure which is attributed to the hypertrophy of the heart, especially in association with the "concentric hypertrophy" which affects the muscle of the whole heart but even here later developments change the picture and show us that the diagnosis was at best a temporary one.

As a rule moderate grades of hypertension give no symptoms. More severe degrees show themselves by signs or symptoms referable to one or more of three great systems,—renal, cardio-vascular, and central nervous system. It is not always possible, in fact it is usually impossible, to separate these systems, as a simple train of symptoms may involve all three, but in a measure, we can say that one or another is chiefly disturbed and at fault.

In so far as the kidneys are affected by the existence of increased blood pressure the result is beneficial so long as the heart muscle continues to act well, as an adequate secretion of urine is made possible by the increase in velocity of the blood passing through the kidneys. The secretion of a relatively large amount of urine of low specific gravity, with a mere trace of albumin and few casts, may be the only sign of renal insufficiency recognized locally. With failing compensation and the onset of myocardial degeneration other signs do develop, but they are due to the lowering of the pressure and relative stasis of the blood. On the other hand the intra-arterial pressure may be lowered when the normal renal epithelium can adequately compensate for the territory thrown out of function, which accounts for the common observation that a reduction in the amount of urine and a fall in blood pressure may denote clinical improvement. Albumin and casts should not be attributed to the hypertension; the three signs are rather correlated manifestations of renal insufficiency, and are not to be looked upon as inter-dependent.

In the arterial system we often look for marked and serious disturbances when the arterial tension is very high, but only when there is already some change in the vessel wall. Cerebral hemorrhage is common, and yet no conceivable elevation of intra-arterial pressure can rupture the wall of a normal vessel. The same is true whether it be applied to hemorrhage into the brain, meningeal spaces, retina, skin or from the nose, lungs or intestinal tract, all of which locations are at times subject to hemor-

rhage in association with hypertension. While simple fibrous thickening will be found to be more common in the presence of high pressure, atheromatous degeneration of the wall is more often associated with extravasation of blood in any locality.

The changes in the heart have already been touched upon. At first simple enlargement by hypertrophy, eccentric or concentric according to the underlying factor in the hypertension, and later dilatation of more extreme grade with valvular insufficiency, loss of muscle tone and actual myocardial degeneration. Once myocarditis is established patients seldom recover sufficiently to be free from symptoms of this vicious circle of the cardio-vascular-renal system. Precordial pain is not so common as is palpitation, nocturnal dyspnea and slight grades of edema of the extremities. The truly remarkable thing is that so many patients who have blood pressure up to 300 mm. may have no symptom referable to the heart until actual myocardial degeneration is far advanced.

To consider the central nervous system in its relation to arterial hypertension is beyond the possible limits of this discussion. We can but make a few statements without argument. Probably no mere functional disturbance of the central nervous system can give a permanent elevation of the arterial blood pressure. In certain affections in which the nervous system is profoundly disturbed without local change, as in Basedow's disease, the pressure may be high, but it is then due to other factors. As to symptoms referable to the nervous system and dependent upon the hypertension we might say much. Probably the numbness and paresthesias of the extremities may be explained upon the basis of vaso-motor and sensory nerve changes induced by the toxic substances which give rise to the hypertension rather than by assuming that the increased pressure is itself the cause. We may accept the statement that vertigo, loss of memory, mental deterioration, etc., are due to cerebral anemia (relative) and that they mark the first sign of circulatory failure, or we may believe with Dieulafoy that these are symptoms of uremia. Headache is probably due to an increase in the intracranial tension, though this leaves out of account that in one man, with a pressure of 175 mm. headache may be most troublesome, while another man with a pressure of 250 mm. or more has never felt it at all. In a man who recently came under our observation, insomnia was the only symptom noted by the patient, though his pressure was found to be 305 mm. at 4 a. m.

Conclusion. From the above incomplete survey of the field we are forced to the conclusion that chronic arterial hypertension is caused chiefly by the direct action of toxic substances in the circulating blood which act upon the muscular tissues of the heart and arteries; that the process is essentially purposeful and conservative as regards the organism as a whole, though ultimately injurious to parts of the organism; that it postpones the effects of earlier harmful agents, effects which would appear much sooner if the body had no such compensatory mechanism. Therefore, in broad terms, to attempt to reduce the degree of hypertension, without at the same time reducing the necessity for increased blood pressure, would be harmful to the organism as a whole, and would speedily render the kidneys incapable of exercising their function at all adequately. The mere fact that arterial tension is increased above normal is evidence that there is need of more than the normal pressure. One would never reduce, or try to prevent a physiological elevation in arterial pressure; no more should he attempt to bring the blood pressure in pathological states below the limit of efficiency. By rest and such other proper means as may be expected to accelerate elimination of metabolic products it is allowable to induce as much reduction of excessive tension as is safe for the individual, and the problem thus appears as an effort to effect a compromise between the conservative and the destructive results of arterial hypertension.

DIAGNOSTIC VALUE OF PASTIA'S SIGN IN SCARLET FEVER.*

By G. H. TAUBLES, M. D., San Francisco.

In May, 1911, the writer presented a paper before the San Francisco County Medical Society in which this newly recognized phenomenon in scarlet fever was discussed with the idea of confirming its presence as being sufficiently characteristic and sufficiently constant to entitle this sign to be enrolled among the list of clinical phenomena of scarlet fever.

To revert briefly to this former communication, the sign, as described by the discoverer, consists in an intense, continuous linear exanthem localized in the skin folds of the anterior aspect of the elbow. It is of a deep rose color becoming darker in time and after several days even ecchymotic. The lines vary in number from 2 to 4 usually and the skin between these lines presents the rash the same as on the rest of the body. To this description the present writer wishes to add two items: Firstly, the sign is occasionally visible in some or all of the other flexures as the base of the neck, wrist, axilla, groin, nates, popliteal folds; and secondly, the red stripes of the sign can be caused to stand out in striking contrast by exerting gentle pressure on the skin and then quickly removing the pressure, whereupon the skin surrounding the lines will be temporarily pale and the lines will be seen as intensely red.

It is the writer's intention to limit this paper to Pastia's sign alone and not to include the artificially produced red lines of Leede, as described by Hecht, Leede and Rumpel, for the reason that this latter sign can be produced in a great variety of cases and is not a natural phenomenon.

Our first consideration will be to identify Pastia's sign with scarlet fever. It has been found by a number of French and Roumanian investigators to be present in practically all of the cases of

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scarlet fever seen by them since the sign was discovered.

In the writer's series of 73 cases it was present in every case. The sign has been simultaneous with rash in time of appearance and in about 80% of the cases has lasted from 2 to 3 weeks after the rash has disappeared. In all of the cases seen in our series the sign outlasted the rash by at least 3 to 6 days.

In cases definitely not scarlet fever the sign was seen in 3 cases of hemorrhagic measles, one case of angio-neurotic edema and in one case of Dr. A. A. O'Neill's of dermatitis venenata (poison oak). The measles cases were typical in every way as to history of exposure, mode of onset and appearance on examination. The stripes of the sign were instead of rose red, a deep rusty brown in color and with stippled edges instead of the linear appearance noted in scarlet.

The case of angio-neurotic edema as well as the case of poison oak presented no difficulties in the way of diagnosis and here again the sign was not typical in that there was an edema present, and by reason of structural differences, the skin at the folds merely showed pink lines similar to those which we can ourselves demonstrate by strongly hyperextending our fingers, whereupon the skin folds appear as bright pink lines against the tense white skin of the rest of the palm and palmar surfaces of the digits.

So much for the appearance of the sign in cases definitely not scarlet fever. Now let us complete the survey by considering those cases which may resemble scarlet fever and also the cases of atypical scarlet fever. Three cases of erythematous drug eruption, two due to iodine, and one due to morphine failed to show the sign. Two cases of so-called fish rash also did not present the sign. Two other cases of angio-neurotic edema did not have the sign visible. In fourteen cases of erysipelas the sign was not once seen. Two cases of antitoxin erythema did not show the sign. Two cases of diffuse acute generalized erythema with fever and gastro-intestinal disturbance, but without the usual sore throat or scarlet tongue and no history of contagion were isolated. They did not at any time present the sign and recovered in a few days without any subsequent desquamation.

In a personal communication Dr. Pastia informs the writer of several interesting cases. One is that of a child suffering from hemorrhagic purpura, who, after an injection of peptone, Witte, showed a scarletiniform eruption, including the sign. In this case isolation was justified because not only did the child desquamate but another patient caught scarlet fever from it. Another interesting case is one of erythema multiforme where in the course of a recurring attack the patient was noticed to present the sign. The diagnosis of scarlet was confirmed by the desquamation which followed and was typical of scarlet fever.

In our experience the sign has served with similar success in six cases where the rash was not typical. These cases presented instead of the usual punctiform rash more of the diffuse redness of an erythema scarlatinoides. By virtue of the sign these cases were isolated and proved by their subsequent course that the diagnosis of scarlet fever had been the correct one.

Again quoting from Dr. Pastia's letter he says that "At present in the contagious services in France this sign is given great diagnostic importance in those cases where the eruption is not quite typical and also in retrospective diagnosis, i. e., when the rash has disappeared but the sign remains."

Now to sum up the reasons for accepting this sign as one of diagnostic value: It is an easily identified feature of practically every case of scarlet fever; it is as well marked in the atypical cases as in the typical cases; it persists so that though the rash may not have been observed the diagnosis can yet be made after several days; its occurrence in other diseases has only been noted in such cases as can be easily differentiated from scarlet fever; it has great prophylactic value in those cases where the history or findings or both are otherwise doubtful, especially after the rash has disappeared and desquamation is not visible.

The writer takes this opportunity of expressing his thanks to Dr. A. A. O'Neill for his kindness in placing the material at the Isolation Hospital at his disposal.

Discussion.

Dr. D'Arcy Power, San Francisco: Only two months ago I had a personal experience that is illustrative of the value of this new sign. I was called to a little child seven years of age which suddenly developed a sore throat that looked like tonsilitis. There was a little nausea but nothing specific. As a matter of precaution I looked at the chest and noted what appeared to me a slight scarlatina rash and drew the attention of the parents to it, but was emphatically informed the child's skin always presented this aspect. The picture by itself was not sufficient to justify a diagnosis of scarlatina and I should undoubtedly not have done so had I not remembered reading of the Pastia sign and on looking at the skin folds in the arm, noted it fully present. I stuck to my diagnosis and was justified by the later history of the case.

CLINICAL ASPECTS OF UROSEPSIS.*

By M. KROTOSZYNER, M. D., San Francisco.

Various are the names and manifold the classifications under which infections of the urinary tract and systemic toxemias, due to one or more septic foci in the uropoetic system, are recorded in the literature. Guiteras' exhaustive text-book, for instance, which represents the most modern views on matters urological, deals with the subject under the different headings of "Urinary fever, Catheter fever, Urinary infection." Watson and Cunningham, to quote one more authoritative standard urological work, devote a brief chapter to "urethral shock or chill—urinary infection or urinary fever."

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Similarly confusing is the classification under which this subject is treated in the rather scant contributions of our periodical literature.

It appeared, therefore, a grateful task to hit upon a name, which would embrace the subject in all its manifestations and phases, and, at the same time, be brief and suggestive of its most important features, viz: urinary infection and intoxication. After careful deliberation and an exhaustive search of the literature, pertaining to this subject, the name "Urosepsis" appeared to be the most appropriate, the simplest and the briefest technical term.

This name is, at present, given to a systemic septic condition, originating in the urinary tract and presenting the picture of a chronic urinary intoxication. The systemic toxemias caused by an ascending infection, due to stagnation of urine in the bladder, ureters and renal pelvis, or by insufficient renal elimination and absorption of toxins, result, as a rule, in the clinically well-defined septicemic condition, which is characterized by digestive disturbances, loss of appetite, a heavily coated tongue, marked general debility and irregular temperatures (septic fever). This characteristic complex of symptoms which is designated by good authority as "Urosepsis" is very frequently observed in old prostatics with ascending infectious processes of the upper urinary tract (ascending pyelitis, pyelonephritis and pyonephrosis). At postmortem examination these lesions, in most instances, represent the fatal cause or demonstrate the cause of failure of a belated prostatectomy. An equally grave form of urinary toxemia, on the other hand, may occur without renal involvement and as a result of absorption of urinary or bacterial toxins from one or more septic foci in the prostate or bladder. I have seen several cases of typical and prolonged urosepsis in elderly prostatics, where, on the autopsy-table, no or such insignificant renal lesions were found, that they alone could not be held responsible for the fatal outcome. It is, furthermore, obvious that a grave and frequently fatal toxemia may occur on the basis of a trauma of the urinary tract, through which urine may escape into the surrounding tissue, where it gradually, through stagnation and decomposition, will exert its toxic properties. Clinically these pathological conditions offer like or similar aspects and etiologically they belong to the same class on account of their origin from one or more infecting foci of the urinary tract.

We are, therefore, justified in combining all these infections and toxic conditions of the urinary tract under the collective term of "urosepsis" differentiating them with regard to their special or topical etiological features as renal, vesical, traumatic and so forth.

The most important cause of traumatic urosepsis is, obviously, instrumentation, and modern urologists are aware of the important role which it plays in producing local and systemic urinary infections. While it is conceded that by adherence to strict asepsis such infections can be numerically reduced to a minimum, we, nevertheless, occasionally encounter cases, in which the simple act of urethral catheterization, performed under the most rigid aseptic precautions, is followed by a grave and even fatal systemic toxemia.

A diabetic of 62 entered the hospital with complete retention due to acute prostatic congestion. Apex of bladder at navel. Gradual evacuation of bladder by means of a small-calibred soft-rubber catheter under laparatomy-asepsis. The same or similar aseptic measures are observed at each consecutive catherization. Symptoms of typical renal urosepsis set in within 48 hours from the first catheterization and the patient succumbs, within a week, to his ascending infection.

It is, on the other hand, a well known fact, that a notoriously "septic" catheterism must not necessarily be followed by untoward symptoms and even in these later days of widely spread knowledge of the value of asepsis, there are still many elderly prostatics immunedly using their catheters with very insufficient or no means of sterilization. Such and similar observations, which occur in the daily practice of every experienced urologist, prove that local and systemic urinary infections are not alone due to a flaw in the technic or asepsis of instrumentation. The real cause of infection lies, in all probability, in the existence of a *locus minoris resistentiæ* somewhere in the lower urinary tract, like a slight abrasion or a minute trauma of the mucosa, through which the entrance and propagation of infecting microorganisms takes place. The toxic material is not, necessarily, brought into the bladder by means of instruments, the introduction of which merely hastens the outbreak and generalization of the preexisting septic focus. In this way the not very rare instances of acute and, occasionally, prolonged febrile reactions to delicately and most carefully performed instrumentation (traumatic or instrumental urosepsis) find their plausible explanation.

A married man of 42 had acquired an acute gonorrhea and was seen a day after an attempt to inject an astringent fluid dispensed by a druggist. Patient is slightly delirious, shows great prostration, heavily coated tongue, high fever. This condition gradually abated within two weeks. The patient came, many months later, under treatment for a chronic urethritis complicated by a stricture. Each attempt of instrumentation (steel-sound) is followed by high fever and malaise lasting several days. These attacks can be reduced in intensity but are not entirely checked by prophylactic large doses of quinine.

An urinary infection, in reality, does not as often, as it was thought heretofore, take place through mechanical interference or by contact-contamination, or ascending proliferation. Through the investigations of Guyon, Posner and Lewin, Wildholz, Brewer and others we know to-day that an urinary infection, in most instances, occurs by the hematogenous route. The kidneys are the dumping-place for the waste-material of metabolism, where these undesirable end-products remain longer than at other parts of the organism. If, then, by way of the circulation, pathogenic bacteria are thrown into the system, they will find in either of the kidneys with an insignificant lesion, a fertile soil for habitation and spread. The classical instance for this mode of infection is furnished by renal tuberculosis, which invariably represents an hemotogeneous and not, as is still tenaciously held in many quarters, an ascending infection on the basis of vesical tuberculosis.

A man of 32 was referred to me some years ago by a prominent genito-urinary specialist of New York, who had advised his client to remove to California for climatic purposes. Very frequent and distressing micturition, many tubercle bacilli in the urine-sediment. Cystoscopy reveals many ulcerations and tubercles. On account of the patient's extreme suffering and, after due counsel, the bladder-wall was scraped and the viscus drained through a suprapubic cystotomy. The patient rapidly becomes septic, delirious and uremic. Exitus within a few weeks from operation.

At the time of this observation Israel and Nitze still sounded their authoritative warnings against ureteral catheterization in urinary tuberculosis on account of the theoretically adduced danger of conveying tubercular virus from the infected bladder to a healthy kidney. To-day we know that the current of infection runs downward and practical experience has demonstrated in innumerable instances the innocuousness of bilateral ureteral catheterization in renal tuberculosis through a bladder that presents many ulcerated tubercular foci.

Other examples of hematogenous infection are the occurrence of a calculous pyelitis in the course of an aseptic renal calculosis or the metastatic renal infections from remote suppurative or inflammatory foci (panaritium, tonsillitis, etc.). In this connection the much-discussed coli infections of the urinary tract, probably caused by migration of normal intestinal inhabitants into the bladder or kidney deserve mention. It is proved that the so-called catheter-fever, which formerly was thought to be caused by shock, irritation of certain nerve centers, malaria, etc., is in most instances due to coli-infection. For the more protracted forms of traumatic urosepsis with a remittent fever and frequent attacks of chills, followed by profuse sweating we will justly assume a streptococcus-invasion. Such cases may take a favorable turn, but may occasionally terminate fatally.

A girl of 18 entered the hospital for incision of a suppurative gonorrheal bartholinitis. Complete euphoria after operation, therefore the patient leaves the hospital in spite of her profuse vaginal and urethral discharge. Reenters 2 weeks later with acute pelviperitonitis, cystitis and pyelitis. Urine-sediment shows B. Coli and streptococci in pure-culture. Exitus occurs within ten days under symptoms of cardiac insufficiency with repeated attacks of collapse, vomiting, singultus, dry tongue, delirium.

The gravest form of urosepsis, though, is the one which prevents either no or only moderate elevations of temperature and which is characterized, from the beginning, by digestive disturbances (abhorrence of food, especially of meat) distressing thirst, disturbances of deglutition and low or insufficient urine-excretion. This form represents a combination of urinary infection and systemic intoxication through the normal or decomposed urine. The toxicity of normal urine is, since the investigations of Bouehard and his pupils, a well-established fact. If the urine stagnates in the bladder and, through backward pressure upon the ureters and renal pelvis, interferes with the excretory function of the kidneys, absorption of urine-toxins and chronic urine-intoxication ensues. The early recognition of this condition, and the timely establishment of a free urinary flow (elimination of urine-toxins) by mechanical means (suprapubic fistula, prostatectomy, etc.), are most grateful therapeutical procedures.

A man of 64, in the third stage of prostatism (dribbling from overdistended bladder) shows marked symptoms of urosepsis. Irregular low fever-curve, dry tongue, continuous thirst, lack of appetite, slight mental aberrations, and marked cachexia. Drainage through a suprapublic fistula, under local anesthesia, results in improvement of uroseptic symptoms; therefore, 4 weeks later, enucleation of protruding median prostatic lobe under spinal anesthesia. Pathological report: Carcinoma of prostate. After a brief period of improvement the patient gradually relapses into a semi-comatous condition with marked uroseptic and uremic symptoms. Exitus.

A prostatic of 74, with advanced urosepsis and almost complete retention, continues in this condition, after suprapublic prostatectomy under spinal anesthesia, for many weeks. Various stages of exacerbation and remission of uroseptic symptoms (irregular temperature, digestional disturbance, slight coma). Gradually uroseptic symptoms abate. complete recovery.

In conclusion I beg to present the following classification of infections and toxic conditions of the urinary tract, which appears to be in accord with our modern views on that subject:

It is proposed to combine all these conditions under the collective term: "urosepsis."

According to the clinical course urosepsis may be divided in the acute, subacute and chronic form.

According to the topical etiology a urethral (prostatic) vesical and renal form may be differentiated.

Other prominent types of urosepsis are the traumatic (instrumental) and bacterial (coli, streptococcus, etc.), forms.

REPORT OF AN INTERESTING CEREBRAL CASE.*

By CULLEN F. WELTY, M. D., San Francisco.

Woman, age 35, Russian. Has been in good health since childhood. Has had a discharge from the ear for the past thirty years, has had pain in the ear and back of the ear many times. The pain back of the ear and on this side of the head has increased in frequency and severity. For the past three weeks has had so much pain on this side of the head that she has been unable to sleep. No vertigo or nystagmus.

Examination—Sensitive to touch over the whole side of the head, painful on the slightest pressure and exquisitely so over the tip of the mastoid. Foul, offensive discharge, destruction of the entire membrane. Epithelium and debris washed from the attic by the intra-tympanic canula. Caloric reaction, positive. Cochlea intact. Recommended immediate operation. Would not submit to operation, pain entirely subsided in the course of a week. There was an interval of probably two months in which there was no pain or discomfort of any kind. Following this, pain suddenly became very intense in the occiput which lasted about two weeks before she consulted me.

Second Examination—Mastoid not painful to superficial touch or pressure. On deep pressure, pain was elicited in this region. Not sensitive to percussion. Pain on pressure and percussion distributed over the entire occiput. Discharge foul and offensive. Whitish masses could be seen in the attic. Caloric reaction, positive. Cochlea intact. Urged immediate operation which was done the following day.

Operative Findings—Large pneumatic mastoid which was carious; small amount of epithelial debris in the attic, dura uncovered by caries in the region of the temporal lobe the size of a twenty-five cent piece, dura apparently healthy. Thiersch grafts applied over the whole cavity, wound closed. Two days following operation there was a sudden rise of temperature to 103.50. The following morning the temperature was normal and continued so. The dressings were changed on the fourth day. Every graft adherent, cavity in perfect condition, very satisfactory in every particular. Dressings changed in two days. The cavity was almost entirely re-epidermized in the course of three weeks from the time she was operated. The patient was so free from discomfort of every kind that on a Sunday she went on a picnic, saying to her friends that she did not know when she had felt so well, free from all discomfort.

During this Sunday night she woke her husband, saying that she did not feel well, that something was wrong but could not say just what it was and did not get up for breakfast. About 10 a. m. she discovered that her right arm and leg were paralyzed (left ear operated). I was notified and saw the patient about 6 p. m. Could not talk, face, arm and leg paralyzed on the opposite side, no temperature. No particular pain in head. No nystagmus or vertigo. Canals and cochlea intact.

Diagnosis—Brain abscess of the temporosphenoidal lobe. My reasons for this were as follows: left ear operated, brain abscess situated in the temporosphenoidal lobe of this side would produce a paralysis of the face, arm and leg, would also paralyze the speech center which is situated on this side in right-handed people. There was no temperature, but this is frequently so. Dr. Milton Lennon was called in consultation. There was no question to be thought of other than brain abscess when we take into consideration the intense pain the patient had prior to operation, that this pain had suddenly ceased and then returned prior to operation, again subsiding. Three weeks following, the patient was found with the conditions before described. My reasoning was that the abscess began to form when she first had her intense headache in the region of the temporosphenoidal lobe, that it had taken on renewed activity when she had her second attack of intense pain in the occiput and that this abscess had ruptured during the night. The patient was sent to the hospital and operated the following morning.

Operative Findings—The dura that was uncovered by caries was somewhat reddened following the removal of the new epidermis. The dura beyond the healthy bone was normal in appearance. The amount of dura that was uncovered was considerably larger than a silver dollar. The dura was then incised from one side of the bony wall to the other, a knife inserted to the depth of one and one-half inches more or less and drawn out sidewise; no pus followed. This was repeated six different times in different places with a negative finding. Drainage tube covered with gauze inserted to the depth of one and one-half inches, wound dressed with iodoform gauze, patient returned to bed in good condition.

Conclusions—Abscess present but not found, when the drainage tube is removed on the second day, the pus will follow its removal.

First day following operation, patient can speak some, the facial paralysis is not so complete, no temperature or discomfort, arm and leg paralyzed.

Second day, can speak better, facial paralysis about same. Drainage tube removed, no pus followed, no temperature. Wound closed.

Conclusions—Must have been an embolus and of non-septic origin.

Third day, speaks well, no temperature, patient comfortable. Wassermann reaction negative.

The wound was dressed on alternating days. The patient continued to improve. First she began to move the toes and fingers, then the whole leg and finally the arm. The arm has not entirely recovered, that is, the movements are not so complete as they were before she was operated. Her hearing is much impaired on the operated side because the labyrinth is covered by a mass of cicatricial tissue, this could be removed by further operative procedure.

Deductions—From such a history, I cannot see my way clear to do anything other than was done, because of the fact that delays in acute brain surgery always mean death.

It is quite unusual for an embolus to appear in one so young, again it is almost unheard of for an embolus to appear during the course of a healing mastoid without complications. The lack of temperature is not of sufficient moment to make one hesitate in the least, so if I were confronted with the identical condition again, I would have to do as I did before.

The fact that this patient recovered from the operative procedures, should establish with all of us, how much can be done and at the same time recovery take place, where serious damage has not been done by previous disease.

I will say again and wish to impress it upon you, that if you hope to do good by cerebral operations, they must be done almost before a diagnosis can be made, as by opening a healthy brain, you are not likely to cause death and by delay in abscess formation, death is inevitable.

Discussion.

Dr. Wm. F. Blake, San Francisco: I think we are lacking in authority to make the statement that one can have recurring or rather a lighting up of a brain abscess without some temperature. Dr. Welty has remarked that in this case there was probably present an embolus. For such a blocking of a blood vessel to have occurred, there must have been present either an endocarditis or some lesion of the vascular system, and if an examination of

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

the arteries and an estimation of the blood pressure had been made, some additional evidence would certainly have been found to aid in the diagnosis.

Dr. Cullen F. Welty, San Francisco: Of course, this is all very nice after the case is over with. As to the differential diagnosis between embolus, thrombus, hemorrhage, or if you please, an acute edema, I will rely on the internist to decide that better than I can. But when you are suddenly confronted with the following condition, complete asphasia, complete paralysis of the arm and leg of the opposite side (regardless of temperature), it is your imperative duty to operate and to do it at once. Such a cerebral condition would not develop once in a thousand cases. In reply to Dr. Horn that the case was of luetic origin, I can dismiss with the following, she had a negative Wassermann, no symptoms of lues, furthermore, the manifestations of lues do not come on so suddenly. Finally, the paralysis entirely disappeared, she was moving the leg and was beginning to move the arm. Up to this time she had not had iodide or anything like it and she would have recovered just the same without it. If I had a case like it again I would do the identical thing I did; because, I say, such a condition as this you would not find in a thousand cases of brain complications associated with mastoids.

SOCIETY REPORTS

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of May, 1912, the following meetings were held:

Section on Medicine, May 7, 1912.

1. Some Conditions Commonly Called Rheumatism. Dr. C. C. Crane.
2. Relation of Bodily Poise to Pain, Especially to Backache. Dr. Samuel J. Hunkin.

Exhibition of Cases.

Discussed by Drs. H. Brunn, J. W. Shields, J. T. Watkins, G. J. McChesney, A. L. Fisher, Adelaide Brown, G. C. Macdonald, L. W. Allen and S. J. Hunkin.

Regular Meeting, May 14, 1912.

1. The Treatment of Alcoholism. Dr. R. E. Bering. Discussed by Drs. H. C. McClenahan, A. W. Hoisholt, J. W. Shiels and R. E. Bering.
2. The Dream-State of Delirium Tremens and the Inadequacy of the California Statutes in not covering certain conditions of irresponsibility for crime, exemplified in an interesting case. Dr. A. W. Hoisholt. Discussion opened by Hon. F. J. Murasky, Judge of the Superior Court.

Section on Surgery, May 21, 1912.

1. Chronic Intestinal Stasis. (W. Arbuthnot Lane) Dr. James Eaves.
2. Medical Side of Habitual Constipation. Dr. Emile Schmoll. Discussed by Drs. J. W. Shiels, R. Russ, G. J. Sweeney, J. Eaves and E. Schmoll.

Eye, Ear, Nose and Throat Section, May 28, 1912.

1. Presentation of Case of Fibroma of Larynx. Dr. L. Eloesser.
2. Some Unusual Foreign Bodies in Frontal Sinus and External Auditory Meatus. Dr. P. de Obarrio. Discussed by Dr. H. B. Graham.
3. Barany's Investigation on Localization in the Cerebellum. Dr. Kaspar Pischel. Discussed by Drs. H. Horn, H. B. Graham and W. F. Schaller.
4. Salvarsan Treatment of Syphilis in Children. Dr. H. H. Yerington. Discussed by Drs. K. Pischel, S. O. Beasley, L. Porter, W. F. Schaller and W. F. Blake.
5. Report of four cases. Dr. H. B. Graham.

THE CALIFORNIA ACADEMY OF MEDICINE.

The California Academy of Medicine held its regular meeting on May 27, 1912, in the library of the County Medical Society. The following scientific program was given:

Stereoroentgenography in Pulmonary Tuberculosis. (A Clinical and Anatomical Study.) Dr. Walter N. Boardman.

Refreshments were served at the close of the meeting.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

State Poison Law—Official Antidotes.

In accordance with "An Act to regulate the sale and use of poisons in the State of California," the following antidotes have been adopted by the State Board of Pharmacy and are required to appear on labels affixed to packages containing such poisons. Prescriptions of regularly licensed practitioners of medicine are exempt from this ruling:

In the circular containing these regulations sent to licensed pharmacists throughout the state, the following advice is offered: "In all cases of poisoning, a physician should be summoned at once. When a physician is at hand, the most prompt emetic and one most easily administered is one-tenth grain apomorphin hypodermically."

ACID, ARSENOUS (ARSENIC): Emetic of mustard; hydrated oxide of iron a cupful; follow with olive oil or white of eggs; mucilaginous drinks. Laudanum (20 drops) if much pain.

ACID, CARBOLIC: Dilute alcohol or whisky. Albuminous substances—milk, white of eggs, etc.

ACID, HYDROCYANIC: Cold water to head and spine. Give stimulants. Inhalation of ammonia. Artificial respiration.

ACIDS, MURIATIC, NITRIC, NITRO-MURIATIC, SULPHURIC: Give no emetics. Give at once large draughts of water or milk. Soft soap, or soap and water, or white of eggs beaten up with water, or olive oil.

ACID, OXALIC: Give chalk or whiting (a tablespoonful), or plaster off the wall, suspended in water. Emetic of mustard; large draughts of warm water; olive oil; mucilaginous drinks. Stimulants—whisky, etc. Apply warmth to extremities.

ACONITE, ITS PREPARATIONS OR DERIVATIVES: Emetic of mustard, follow with large draughts of warm water; then strong tea, coffee or whisky. Keep patient in horizontal position. Keep up artificial respiration.

ANTIMONY, AND ITS PREPARATIONS (TARTAR EMETIC): Give emetics of mustard or zinc sulphate. Milk; white of eggs freely mixed with water; demulcent drinks.

ANTISEPTIC TABLETS (CORROSIVE SUBLIMATE—BICHLORIDE OF MERCURY): Give white of eggs; flour or starch mixed with water; emetic of mustard. Strong tea; coffee; whisky. Demulcent drinks if necessary.

BELLADONNA, ITS PREPARATIONS OR DERIVATIVES: Emetic of mustard, followed by large draughts of warm water; then strong tea or coffee. Arouse patient and keep him in motion.

BROMINE: If inhalation—Fresh air; inhalation of ammonia. If swallowed—Emetic. Starch, followed by magnesia; bicarbonate of soda; white of eggs; milk; flour and water.

CANTHARIDES: Avoid oils. Emetics first of all Demulcents. Stimulants. Employ artificial heat externally.

CHLORAL HYDRATE: Horizontal position. Cold water to head. Stimulants. Emetic of mustard.

CHLOROFORM: Horizontal position. Cold water to head. Stimulants. Emetic of mustard.

COCCULUS INDICUS: Emetic of mustard, followed by large draughts of warm water. Give powdered charcoal. To relieve spasms let patient inhale pure chloroform or give chloral hydrate (25 grains).

CONIUM: Emetic of mustard, followed by large

draughts of warm water; then strong tea or coffee. Arouse patient and keep him in motion.

COTTON ROOT AND ITS PREPARATIONS: Emetic of mustard, followed by large draughts of warm water. Strong tea or coffee. Stimulants (whisky, etc.) freely. Keep patient in horizontal position. Employ warmth and friction to extremities. Artificial respiration.

COWHAGE: Large doses of olive oil.

CREOSOTE: Emetic of mustard. White of eggs beaten up with water. Olive oil; magnesia. Stimulants (whisky, etc.) freely. Keep patient in horizontal position. Employ warmth and friction to the extremities.

CROTON OIL: Give white of eggs, or flour mixed with water. Emetic of mustard. Strong tea or coffee. Stimulants (whisky, etc.) . Demulcent drinks if necessary.

CYANIDE OF POTASSIUM: As for Acid, Hydrocyanic.

DIGITALIS, ITS PREPARATIONS AND DERIVATIVES: Emetic of mustard, followed with large draughts of warm water. Strong tea or coffee. Stimulants (whisky, etc.) freely. Keep patient in horizontal position. Apply warmth and friction to the extremities. Artificial respiration.

ETHER (Swallowed). As for Chloroform.

FORMALIN OR SOLUTION OF FORMALDEHYDE: Ammonia in dilute solutions. Demulcent drinks. Inhalations of ammonia.

FOWLER'S SOLUTION. As for Arsenic.

GELSEMIUM: Coffee; brandy; emetic of ipecac.

HYOSCYAMUS, ITS PREPARATIONS OR DERIVATIVES: Emetic of mustard, followed by large draughts of warm water; then strong tea or coffee. Arouse patient and keep him in motion.

INDIAN HEMP (CANNABIS INDICA): Emetic of mustard, followed by large draughts of warm water; then strong tea or coffee. Arouse patient and keep him in motion.

IODIN, AND ITS PREPARATIONS: Give starch; white of eggs, or flour mixed with water. Emetic of mustard. Strong tea or coffee; whisky or other stimulants. Demulcent drinks if necessary.

LYSOL: Dilute alcohol or whisky. Albuminous substances—milk, white of eggs, etc.

NITRO-GLYCERIN: Cold to head. Horizontal position. Give emetics and cathartics. Ergot.

NUX VOMICA, ITS PREPARATIONS OR DERIVATIVES: Emetic of mustard, followed by large draughts of warm water. Give powdered charcoal. To relieve spasms let patient inhale pure chloroform, or give chloral hydrate (25 grains).

OIL OF BITTER ALMONDS, ESSENTIAL: As for Acid, Hydrocyanic.

PHOSPHORUS, AND ITS POISONOUS DERIVATIVES: Emetic of mustard, or blue vitrol (3 grains) every five minutes until vomiting occurs. A teaspoonful of old thick oil of turpentine (avoid other oils); also epsom salts, half ounce in tumblerful of water.

PENNYROYAL, OIL OF: Give white of eggs, or flour mixed with water. Emetic of mustard. Strong tea or coffee; stimulants (whisky, etc.). Demulcent drinks if required.

RED AND WHITE PRECIPITATE: As for Antiseptic Tablets.

OIL OF RUE; OIL OF SAVIN; OIL OF TANSY: As for Oil of Pennyroyal.

SANTONIN: Evacuate stomach; use stimulants and emetics.

STROPHANTHUS AND ITS PREPARATIONS: Give zinc sulphate and mustard as emetics. Tannic acid. Stimulants (brandy or whisky). Epsom salts.

STRYCHNINE: As for Nux Vomica.

SUGAR OF LEAD: Give epsom salts (one-half ounce) dissolved in a tumbler of water. Emetic of mustard; follow with large draughts of warm water. Milk; demulcent drinks.

VERATRUM VIRIDE, PREPARATIONS AND DERIVATIVES: Emetic of mustard; follow with large draughts of warm water. Strong tea or coffee; stimulants (whisky, etc.) freely. Keep patient in horizontal position. Apply warmth to the extremities. Artificial respiration.

WOOD ALCOHOL: Give warm water and salt (two tablespoonfuls to a tumblerful) immediately; repeat at short intervals. Stimulate the respiratory movement. Give strong coffee.

YELLOW JASMINE: Coffee; brandy; emetic of ipecac or mustard.

ZINC SULPHATE: Give white of eggs; flour mixed with water. Baking or washing soda. Emetic of mustard. Strong tea or coffee; stimulants (whisky, etc.). Demulcent drinks if required.

Suitable demulcent drinks are: Flaxseed tea; slippery elm tea; barley water; thin starch water; milk; white of eggs with water.

No antidotes are given for morphin, codein, heroin, opium, cocain and their salts, compounds or preparations, as their sale is prohibited except on prescription of a duly licensed physician, dentist or veterinary surgeon. The latter is not permitted to prescribe narcotic drugs for human beings, and must name animal prescribed for.

Prescriptions containing more than 8 grs. opium, 1 gr. morphin, 2 grs. codein, one-half gr. heroin, 1 gr. cocain, 1 gr. alpha eucain, 1 gr. beta eucain, 1 gr. novocain, or 60 grs. chloral hydrate, to each fluid or avoirdupois ounce, **cannot be repeated without the written order of the prescriber.**

"No copy or duplicate of any narcotic prescription shall be given, and the original shall be kept on file for inspection for at least three years."

Patient's name and the date must be written by the prescriber on all prescriptions for narcotic drugs.

BOOK REVIEWS

A Treatise on Tumors. By Arthur F. Hertzler. 4to. Cloth., pp. 725. Illustrated. Published by Lea & Febiger, Philadelphia, 1912. Price, $7.00.

This treatise aims to combine in one volume the pathological and the clinical aspects of tumors It has three sections: General Biology, Special Pathology, and Regional Consideration of Tumors. The chapter on General Biology is very scanty. The biochemistry of tumors is not touched upon at all. The results of the work of Bashford, of Ehrlich and his school, and of the Buffalo laboratories on tumor-growth and immunity are not mentioned. The author's statement that the "vast field of experimental oncology has been entirely omitted because . . . its results would but confuse the student and practitioner" will scarcely pass uncontested. The section on Special Pathology gives a good brief oversight of the histology of tumors. The clinical section is perhaps the best; it contains some good clinical descriptions and is well illustrated. On the whole, however, it is difficult to see the need for the book. It offers little that is not already to be found in the ordinary text-books of pathology and of surgery, and it is improbable that the student or practitioner for whom it is intended will feel warranted in the purchase of a large volume which merely duplicates the contents of his old and well-conned standbys. The book is well printed. The good photographs of the third section may make it useful for purposes of clinical instruction.

L. E.

Retinoscopy. By James Thorington, A. M., M. D. Published by P. Blakinson's Son & Co. Sixth edition. 1911. Price, $1.00.

This little book fulfills its mission in the simplest words possible. It tells one where to look and what to look for at every step in

retinoscopy. The style of the book is such that the reader remembers every direction given.

E. D. D.

Duodenal Ulcer. By B. G. A. Moynihan. Second edition, pp. 486; illustrated; cloth. W. B. Saunders & Co., Philadelphia and London, Publishers. Price, $5.00.

In this second edition the size of the book has been increased from 379 to 486 pages, 115 new case histories and 15 illustrations have been added. The most important changes concern the chapters on Symptoms and Diagnosis and Differential Diagnosis. The brilliant investigations of Hertz on the sensibility of the alimentary canal have thrown light on much that was dark in the symptomatology of duodenal ulcer and have permitted of a satisfactory interpretation of the "hunger pains"—a phenomenon which at the printing of the first edition was still inexplicable. A discussion of X-Ray findings and the reproduction of X-Ray plates in subsequent editions would still further add to the interest of this classical monograph.

L. E.

Health and Medical Inspection of School Children. By Walter S. Cornell, M. D., Director of Medical Inspection of Public Schools, Philadelphia. Published by F. A. Davis Co., Philadelphia. 1912.

The possibilities of medical inspection in the public schools and its close relation to every sociologic problem are borne in on the reader as page after page of this fascinating book is turned. Excellent original illustrations emphasize the text, and throughout the note of conclusion from personal experience is sounded. The book is one to recommend itself to teachers, parents, and citizens who are interested in having the pupils in our public schools given every chance to secure and maintain trained minds in sound bodies as assets for future usefulness to themselves and the state. Actual facts as to the principles underlying proper school inspection, its costs, limitations, the amount each inspector can be expected to cover, and the qualifications of the inspectors will elucidate the demands of the situation to Boards of Health. All in all, the book is pertinent at this time and is a valuable contribution to preventive medicine.

A. B.

The Treatment of Shortsight. By Professor D. J. Hirschberg, Berlin. Translated by G. Lindsay John, M. D., F. R. C. S. Published by Rebman Co. 1912. Price, $1.25.

This monograph on Short Sight covers the ground exhaustively. It is the author's conclusions of his life work. For the student and younger men it comes as a boon to point out the dangers and pitfalls encountered in correcting myopia. It teaches the principles of treatment as no text-book can, carrying the reader through myopia; its complications and treatment and ending with words of wisdom on the preservation of the myopes sight in school children and future generations. The book is within reach of all and satisfied patients will amply repay the reader for the time spent with it.

E. D. D.

AN OMISSION.

In the June Journal, under "Members Registered at Del Monte Meeting," page 239, Dr. Anne W. Williams', of Hayward, name should have appeared but unfortunately was omitted.

CHANGES.

Clark, Wm. A., from Claremont Manor, Oakland, to Oakland Bank of Savings Bldg., Oakland.

Miller, B. F., from San Diego to Whittier, Cal.

Kronenberg, H., from 135 Stockton St., San Francisco, to 166 Geary St., San Francisco.

Gallagher, J. J., from 111 Ellis St., San Francisco, to 166 Geary St., San Francisco.

Briggs, Le Roy, from Oakland to 240 Stockton St., San Francisco.

McKibbon, R. E., from Napa to 433 W. 46th St., Los Angeles, Cal.

Gavey, Walter, from Kennett to Red Bluff, Cal.

Mackechnie, C. A., 981 Florida St., San Francisco, to 130 Giraud St., San Bruno, Cal.

Hartwell, Robt. W., from San Francisco to Tuolumne, Cal.

Barry, Ray Kent, from Sunnyside, Cal., to Turlock, Cal.

Bricca, C. R., from 135 Stockton St., to 166 Geary St., San Francisco.

Linebaugh, Jno. A., from La Porte to Alleghany, Cal.

Clayton, Wm. A., from Alleghany to Palo Alto, Cal.

Hyde, Lawrence, from addresses unknown to Visalia.

O'Neal, Robt. McW., from San Francisco to Tonopah, Nev.

Derbyshire, A. L., from 734 Twenty-fourth St., San Diego, to Timken Bldg., San Diego.

Sherry, Henry, from Stanton Bldg., Pasadena, to 461 East Colorado St., Pasadena.

Spiro, Harry, from 1629 Sutter St., San Francisco, to 740 Hyde St., San Francisco.

Rea, C. T., from San Francisco to 1525 Clay St., Oakland, Cal.

Rosenkranz, H. A., from Illinois to Anglo-American Medical Assn., 105 Friedrichstrasse, Berlin.

Shannan, Jas. W., from 2104 University Ave., San Diego, to 1313 D St., San Diego, Cal.

Evans, C. W., from 2121 E. First St., Los Angeles, to First and Cummings Sts., Los Angeles.

Laughlin, C. B., from Balls Ferry, Shasta Co., to address unknown.

Cushman, R. A., from Fullerton to Santa Ana, Cal.

Pascoe, M. W., from Los Angeles to Taft, Cal.

Dolman, P., from Germany to 312 N. Thirty-third St., Philadelphia, Pa.

Huntoon, A. F., from San Fernando Bldg., Los Angeles, to Fourth and Main Sts., Los Angeles.

Huntoon, H. A., from 1029 W. 56th St., Los Angeles, to 5421 S. Vermont Ave., Los Angeles.

La Fontaine, E. C., from 2970 California St., San Francisco, to 1211 Polk St., San Francisco.

Gottlieb, A., from 381 Bush St., San Francisco, to 1201 O'Farrell St., San Francisco.

Crosby, D., from 14th and Fruitvale Ave., Fruitvale, to 1701 Fruitvale Ave., Fruitvale, Cal.

Wagner, Henry W., from 1012 Eighth St., Sacramento, to 2011 Twenty-first St., Sacramento.

NEW MEMBERS.

Currie, A. Harlan, Riverside, Cal.
Nahl, C. A., Sacramento, Cal.
Foster, G. A., Sacramento, Cal.
Wallace, C. T., Eureka, Cal.
Watters, H. G., Watsonville, Cal.
Boland, A. E., Needles, Cal.
Downing, E. D., San Francisco, Cal.
Gottlieb, A. J., San Francisco, Cal.
Brown, A. L., Riverside, Cal.
Baird, H. R., Nicolaus, Cal.
Derbyshire, A. L., San Diego, Cal.
Gallison, F. E., Merced Falls, Cal.
McClelland, J. L., Los Banos, Cal.
Reed, Elgar (not Edgar) as appeared in June issue, Chino, Cal.

DEATHS.

Elliott, C. C., Soldiers' Home, Los Angeles, Cal.
Hannan, W. F., Colfax, Cal.
Adams, Z. T., La Grange, Cal.
Shorb, A. S., Los Angeles, Cal.
Rowell, Chester, Fresno, Cal.
MacMonagle, B., San Francisco, Cal. (Died in Paris, France.)
Briggs, Elmer E., Santa Rosa, Cal.

California State Journal of Medicine.

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PHILIP MILLS JONES, M. D., Secretary and Editor

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. X AUGUST, 1912. No. 8

EDITORIAL NOTES.

SPECIAL NOTICE!

In the advertising pages, in this issue, will be found some special notices of importance to all members. These refer to the Register and Directory, now in process of compilation, and to the changes in the matter of the payment of dues, the status of a member in regard to medical defense, etc.

It may be here announced that the proposition to increase the assessment for 1912 by $1.00, for the purpose of prosecuting illegal practitioners, was not approved by the county societies and consequently there is no additional assessment.

MISPLACED UNEASINESS.

There is much wisdom, philosophy and innate honesty in children; it is as we grow up that we mask our real natures and cultivate "policy" and dissimulation. So too there is much of truth in the sayings of children. "Sticks and stones may break my bones, but words can never hurt me" contains in it more true philosophy than many chapters in many books. Some friends and some other friends (?) of your JOURNAL and its editor are much exercised because no attention has ever been paid to the many abusive attacks upon us that have appeared from time to time during the whole period of our existence as a publication. Filthy, abusive personalities are not argument. Comment that is obviously paid for by the dirty dollars of dirty and dishonest nostrum manufacturers, hurts nobody save him who utters it or him who takes it seriously. There is nothing elevating in replying to attacks that are dishonest in origin and merely vile and abusive in their nature. Life is too short to waste any of it in thus sacrificing one's selfrespect. Honest criticism, an honest fight, will always be welcome; personal abuse, perverted and dishonest attacks, will always be ignored—as they have been.

PROFESSIONAL OPTIMISM.

A gem of thought that is far too good to be wasted in a "six-point foot note" even in so estimable a publication as the *Boston Medical and Surgical Journal,* is the following paragraph which Dr. W. T. Councilman appends to an address on "Experiences of a Medical Teacher" in the issue for June 27th. Speaking of optimism, he says:

> "On critically reading this, the writer feels that some further elucidation is necessary. Of course, it is possible for a man to create about himself a fool's paradise in which he may dwell in happy contentment. He can quickly create such an environment by well-selected stages of alcoholic intoxication. The great trouble comes with the voluntary selection of optimism as a career. To most men, evil becomes deterent by its exhibition in others. Thus, to the pure in heart, vice by demonstration is made abhorrent; to earnest, sober men, drunkenness is unattractive, and an agent at times so useful as is alcohol may be totally condemned. Although some may temporarily cover themselves with a cloak of optimism, using it as the wolf used the sheep skin, the only genuine and constant optimists are the beneficiaries of a protective tariff, syphilitics in the early stages of general paralysis, some successful clinicians, who turn to financial use their God-given intuitions of disease, and some presidents of colleges. The revelations of optimism which one gains from these sources makes the state of mind seem unattractive. But on the other hand if the world as seen seems good don't change your glasses."

THE A. M. A. MEETING.

The annual meeting of the American Medical Association at Atlantic City was a distinct success. The attendance was very good—within a small number of reaching the high water mark for Atlantic City meetings. A very large amount of work was done by the House of Delegates, but probably the most important single action taken was the decision to call a meeting of the Secretaries of all State Medical organizations to be held in Chicago this Fall, for the purpose of securing some more generally similar and satisfactory method of regulating membership. The President, in his address to the House of Delegates, made some recommendations that would have been far reaching and disastrous had they

been carried out. But the House of Delegates wisely rejected these, and perhaps the most charitable thing to do is to make no further comment. Minneapolis is to be the place of the next meeting, the exact date not having as yet been determined. The officers elected are as follows:

President-Elect, Dr. John A. Witherspoon, Nashville, Tenn.; First Vice-President, Dr. Philander A. Harris, Paterson, N. J.; Second Vice-President, Dr. John L. Heffron, Syracuse, N. Y.; Third Vice-President, Dr. H. H. McClanahan, Omaha, Neb.; Fourth Vice-President, Dr. Henry D. Fry, Washington, D. C.; Secretary, Dr. Alexander R. Craig, Chicago; Treasurer, Dr. William Allen Pusey, Chicago; Trustees, Dr. M. L. Harris, Chicago; Dr. C. A. Daugherty, South Bend, Ind.; Dr. W. T. Councilman, Boston; Member of the Judicial Council, Dr. George W. Guthrie, Wilkes-Barre, Pa.; Member of Council on Health and Public Instruction, Dr. Walter B. Cannon, Boston; Members of Council on Medical Education, Dr. James W. Holland, Philadelphia; Dr. W. D. Haggard, Nashville, Tenn.

FREE TREATMENT FOR RABIES.

There seems to be some slight misunderstanding in regard to the giving of free treatment for rabies and for that reason the following official statement is published:

"You are correct in your understanding regarding the persons who are given Pasteur treatment by the state. The Board of Health furnishes treatment at the State Hygienic Laboratory and its branches to those persons who need it and are unable to purchase it from their private physicians. Persons desiring the treatment must apply to the local health officers, who in turn are expected to telegraph to the Secretary of the State Board of Health, vouching for the suitability of the case, financially and otherwise, for free treatment. The State Hygienic Laboratory makes no charge for the treatments of those persons who are accepted. In fact the laboratory receives no money except through its appropriation. It will be of benefit to us, as well as to the commercial houses of the state, if you will give the conditions under which treatment is obtained such publicity as you are able."

A GRAFTER WITH US.

From Texas comes the kindly warning that a man by the name of J. B. Ruffo, claiming to be a physician, has victimized a number of persons in that state. He is supposed to be somewhere in Southern California; last heard of at San Diego. He tells quite a tale of woe and is a plausible and convincing talker. A number of photographs of the man have been sent to the office of the JOURNAL and if you think you have this gentleman in your community, write to the Secretary and he will forward a photograph.

WORKS WORDS.

The Hon. John D. Works (formerly referred to by the San Francisco *Examiner* as Judge "Spring Valley Water" Works), California's contribution to that awful and fearful body known as the United States Senate, delivered himself, on April 29th and 30th, of some more truly intelligent remarks. If the whole world could only have this grade of intelligence to guide it, it would be a much more amusing place than it is; something idiotic would be doing every moment! A goodly portion of the time of our excessively expensive Senate was taken up by this apparently semi-demented Works in the task of promoting eddyism and lieing about the American Medical Association and the work of American physicians. It is doubtful whether any other document of similar size contains so many lies, so many half-truths cleverly distorted and so much absolute tommyrot as does the printed "Speech of Hon. John D. Works of California in the Senate of the United States." And of course this speech is printed in large quantities—by the Government—free of charge to Works. Equally of course, it is widely circulated by Works—at the expense of the Government. And then some people wonder why the Post Office does not pay and why it costs so much to run the country! Foolish questions!

WONDER OF WONDERS!

Sometimes there is such a thing as too much of our old adage, "De mortuis nil nisi bonum." This view seems to be shared with some editors of lay publications, for concerning the death of our late notorious citizen, "Dr." C. C. O'Donnell, the *Stockton Mail* has this to say:

"The death of Dr. C. C. O'Donnell was noticed by some of the San Francisco newspapers with bashful coyness. One might have thought that a commonplace physician, no better and no worse than the ordinary run, had quit his pills and boluses to twang a harp on the other side of Jordan. As a matter of fact, the fellow was notorious. He ought to have died long ago. If the Devil isn't frying him on a particularly hot gridiron right now, nobody is in any danger of being cooked for his sins in the next world. He certainly was a detestable character. But he was a steady advertiser."

Similarity of thought invaded the office of the *Fresno Mirror*, for about the same date we find this editorial comment:

"In the death of Dr. C. C. O'Donnell San Francisco loses a citizen it could have spared many years ago. Probably it would have been better if he had never been born at all. He was an ill-smelling joke as a politician and a disgrace to the medical profession. If he had had his deserts he would have died in jail."

Bernard Shaw, in his preface to "Three Plays by Brieux," has some most pertinent reflections.

SERIOUS HORRORS.

"Nothing that is admittedly and unmistakably horrible matters very much, because it frightens people into seeking a remedy; the serious horrors are those which seem entirely respectable and normal to respectable and normal men." In April, a "floating palace" sank, drowning some 1,500 people, many of them wealthy and prominent. The disaster was "admittedly and unmistakably horrible" and the world gasped its horror. In March, there were 1,643 deaths from tuberculosis, in New York State, and there were reported 2,672 cases of "pulmonary or laryngeal tuberculosis." Tuberculosis seems to be still quite "respectable and normal" in spite of the fact that New York has had a good tuberculosis law since 1908. It would be sadly interesting to know how many women were subjected to serious operations due to pelvic gonorrheal infection innocently acquired, during the same period; doubtless the number would be shockingly large. And yet clean, innocent women are daily being married to infected men, often with the knowledge of their parents. It is within the personal knowledge of almost every physician of much experience, that "the wedding cannot be postponed" because of the "social scandal," even though the parents know the man has a venereal infection. But let us not speak openly of such things as sexual matters or venereal diseases; let us not permit such plays as Brieux's; to do so might wound the tender feelings of the "respectable and normal." These are certainly "serious horrors."

A REPLY.

In the June number of the STATE JOURNAL appeared an editorial * commenting upon the action of those physicians who had subscribed to a medical picture gallery with the provision that their own likenesses should be included in the exhibit. Substantially, this editorial comment contended that the egotism and vanity of some members of the medical fraternity had been capitalized by the promoters of a purely commercial enterprise, professional men of various shades and degrees of local prominence having agreed to part with $150.00 or so for the privilege of seeing copperplate portraits of themselves published with those of physicians and surgeons of national and international repute, a page of inspired and personally edited biography to accompany each picture.

I cannot spare the time to enter into a discussion with the writer of that editorial, but I wish to point out that both his antiquated view-point as well as the labored rhetoric in which he clothes his misconceptions afford ample evidence that he is out of sympathy with the progressive spirit of the times and is in all probability a member of that venerable group of "elder statesmen" who are fast ceasing to be a factor in the conduct of matters medical in this State. I will take time, however, to protest against the imputation direct or implied in his remarks. In disagreement I insist that the action of those physicians who have subscribed to this project bespeaks an honorable ambition.

The proposition is that in return for our subscription we shall receive two books, each of fifty engravings and memoirs, each book to contain beside our own the pictures of whatever distinguished colleagues we may personally select from the lists submitted to us by the company. It is contended that others beside the "most eminent" men in our profession have been approached. In so large an undertaking mistakes, errors of judgment, are bound to creep in. I am sure, however, that no one will regret them more than the company. The agent gave me his personal assurance that he had been supplied with the names of only the most eminent men in the district allotted to him. And even if the names of some men of lesser eminence do creep in, of what harm is it? We do not have to include them in *our* editions of the work.

Perhaps its greatest beauty is that we can select our associates, so to speak, picking out the great men with whose portraits our own shall appear. Among them will be those of some of our friends and for the rest, if they are not our friends at least we are theirs. Why, you may ask, have at all albums of the photographs of men who wouldn't remember you if they saw you? If that be so, which I most seriously question, *their* memories are at fault, not ours. Why, in Heaven's name, shouldn't our pictures appear with theirs? The editorial in question implies that the only reason for our appearing with them is a financial one. It would be a dereliction of professional dignity to reply to this innuendo, but if it could be true, would it not be worth $150.00 to see them there anyhow? I think it would.

There is another and practical side to this question. A side which the antique writer of this editorial overlooked. The two volumes de luxe which the company obligates itself to deliver to us are of a size and shape ideally adapted to a waiting-room table. It is easy to imagine the gratification of a patient who, upon picking up such a book, finds therein the photograph of the doctor she is visiting supported on the one hand for example by the portrait of Sir William Osler and on the other by that of Dr. Simon Flexner. For their own sake, as well as for ours, we have to maintain the confidence in us of our patients and what more convincing evidence of her wisdom in selecting her doctor could such a patient have than is afforded by these volumes? Would she not feel that she need "seek no further, for better can't be found?" We think she would.

To put it another way we think that these volumes enable us to meet the needs expressed by the dolorous poet who transformed Burns' lines beginning "A wad some Power the giftie gie

* "Some men are born great, etc." Page 221.

us, To see oursels as ithers see us" till it read "O wad that some Power some fairies or elves Would make ithers see us as we see ourselves."

S. N. I.

PONTIFICAL AIRS, FORSOOTH!

It is a long time since that spirit became extinct in the medical profession which prompted a physician to declare that he would rather err with Galen than accept the truth from Harvey. Yet to read some of the comments called forth by the libel action of Dr. Robert Bell against Dr. E. F. Bashford and the British Medical Association one might suppose that the physicians and surgeons of the present day ply their calling in measureless content with their achievements, and that they visit with the contumely of the self-sufficient any one who presumed to conduct them by his researches to truer views and better treatment of disease.

Dr. Bashford is General Superintendent of Research under the Imperial Cancer Research Fund. Dr. Bell is a legally qualified practitioner who, as stated by his counsel, was at one time Senior Physician to the Women's Hospital at Glasgow; having often operated for cancer and having invariably failed to cure by his operations he decided in 1894, "after years of experience," never to use the knife again. In place thereof he treats cancer by dietetic and hygienic measures, asserting in his publications that he can thereby cure it and easily prevent it. He has a theory that cancer is a blood disease and professes to be able to detect its presence in the blood by a microscopic examination. When these pretensions were censured by Dr. Bashford in an article in the British Medical Journal entitled "Cancer, Credulity and Quackery" Dr. Bell, feeling aggrieved at being "grouped with persons who were selling medicines and quack remedies of all kinds," charged Dr. Bashford with having libeled him, and the trial of the case before the Lord Chief Justice of England and a special jury resulted in a verdict for the plaintiff, with an award of two thousand pounds damages. It was not denied by their counsel that the defendants had called Dr. Bell a quack, in effect if not in so many words, so that the question for the jury was whether he is a quack or not, and deciding that he is not they marked their sense of the injustice of the charge by very heavy damages.

If a quack is, as the dictionary defines it, one who pretends to skill or knowledge which he does not possess, Dr. Bell *is* a quack, although perhaps of a mitigated variety. Unanimously medical men of wide experience and unimpeachable integrity—and men of this description testified to that effect at the trial—declare that cancer cannot be prevented or cured by such means as Dr. Bell employs. While admitting with due humility that surgery is inadequate to cope with the disease and offers but slight chances for a cure they deny that at present any other treatment offers any chance at all, and warn the sufferer from cancer who hearkens to the pretensions of Dr. Bell that he risks his only opportunity. Strange to say, the result of this action was to make Dr. Bell appear to judge, jury, press and public as a martyr to the cause of research, as a representative of "honest orthodoxy" (to use the expression of one newspaper), as one who, in the legitimate pursuit of knowledge, has incurred the hostility of a majority insisting dogmatically on the acceptance of prevailing views. We are informed that the verdict was received with applause in court. The Lord Chief Justice remarked: "It would be a lamentable thing if any attempt or research to find a cure for this scourge should be checked by unjust criticism and comment." And the London "Times" in an editorial assures the medical profession that public sympathy is with Dr. Bell and taxes them with "too great a tendency to assume pontifical airs."

Needless to remark, these words imply a prodigious misconception of the spirit which impels medical investigators and the medical press to expose those whose boasts of therapeutic powers, whether prompted by vanity or rapacity, divert their victims from what *may* benefit them to what cannot possibly do so. These words reveal a distrust of properly constituted medical authority, which cannot fail to be obstructive to beneficent medical legislation and to influence altogether for the worse the relations between the profession and the public. It is incomprehensible why the Lord Chief Justice should see "unjust criticism and comment" in a protest against a menace to the public welfare. Probably a cancer on his judicial person would cause his Lordship to reverse himself.

SEX IN RELATION TO SOCIETY.*

Some few years ago Milliken ended an editorial wail of several hundred words with this last sigh: "But then, how few people ever really think!" For so many centuries the human mind has been cramped and restricted within the narrow limitations of the laws and "social customs" born of the innumerable man-made religions, that truly very few ever think. Of real thinkers, when one comes to a consideration of the problems presented in the title of the present work, three names present themselves: J. G. Frazer, Havelock Ellis and Forel. This is the last of a series of six volumes by Ellis and it contains the sanest, clearest and keenest presentation of facts and deductions therefrom that has been put into type. There is no rant; there is freedom of thought unrestricted by unscientific considerations of extraneous matters; there is a calm, judicial weighing of each problem presented; and the problems are huge. The Function of Chastity; The Problem of Sexual Abstinence; Prostitution; The Conquest of the Venereal Diseases; Sexual Morality; Marriage; The Art of Love; Science of Procreation; are these not indeed problems? Shall women forever pay with their lives for their ignorance of venereal diseases and for the silly

* Studies in the Psychology of Sex. Vol. VI. Sex in Relation to Society. By Havelock Ellis. Philadelphia, F. A. Davis Company. 642 pages. $3.00.

"social" injunction that these things may not be discussed? Will the woman who sells her body in a loathsome marriage forever be held "respectable" and the woman who gives herself in a pure love and affection forever be outcast? Will people ever free their minds and begin to think? One can but wonder.

In the chapter on Sexual Abstinence there is an enormous amount of food for thought, for any one who will let himself think. "We ought to say, Rohleder believes, 'Permanent abstinence is unnatural and has never existed.' . . . If indeed we were to eliminate what is commonly regarded as the religious and moral aspect of the matter—an aspect, be it remembered, which has no bearing on the essential natural facts of the question—we cannot fail to perceive that these ostentatious differences of conviction would be reduced within very narrow and trifling limits."

Lest Ellis be regarded as "socialistic" (Heaven save the mark!), weigh carefully this excerpt from the same chapter:

"It seems to me that there should be no doubt whatever as to the correct professional attitude of the physician in relation to this question of advice concerning sexual intercourse. The physician is never entitled to advise his patient to adopt sexual intercourse outside marriage nor any method of relief which is commonly regarded as illegitimate. It is said that the physician has nothing to do with considerations of conventional morality. . . . But, after all, even if that be admitted, . . . In giving such a prescription the physician has in fact not the slightest knowledge of what he may be prescribing. He may be giving his patient a venereal disease; he may be giving the anxieties and responsibilities of an illegitimate child; the prescriber is quite in the dark."

And, if you really want something to think hard about, consider this:

"It has been necessary to treat seriously this problem of 'sexual abstinence' because we have behind us the traditions of two thousand years based on certain ideals of sexual law and sexual license, together with the long effort to build up practices more or less conditioned by those ideals. We cannot immediately escape from these traditions even when we question their validity for ourselves. We have not only to recognize their existence, but also to accept the fact that for some time to come they must still to a considerable extent control the thoughts and even in some degree the actions of existing communities.

"It is undoubtedly deplorable. It involves the introduction of an artificiality into a real natural order. Love is real and positive; chastity is real and positive. But sexual abstinence is unreal and negative, in the strict sense perhaps impossible. The underlying feelings of all those who have emphasized its importance is that a physiological process can be good or bad according as it is or is not carried out under certain arbitrary external conditions, which render it licit or illicit. An act of sexual intercourse under the name 'marriage' is beneficial; the very same act, under the name of 'incontinence,' is pernicious. No physiological process, and still less any spiritual process, can bear such restriction. It is as much as to say that a meal becomes good or bad, digestible or indigestible, according as a grace is or is not pronounced before eating it."

For those who wish really to think about the truth and to study human problems rather than to swallow delusional and hysterical personal opinions, this book of Havelock Ellis' will be indeed a treasure. But probably there are many who will be scandalized that anyone should have such "ideas;" verily, they know not truth.

COUNCIL MEETING, MAY 17th, 1912.

A joint meeting of the Council of the State Society and of the Committee on Public Policy and Legislation was held in San Francisco on May 17th, 1912, at noon. Of the Council there were present Drs. Kenyon, Ewer, Aiken, Edwards, Ryfkogel, Van Zwalenburg, Spencer and Parkinson; of the Committee there were present Drs. Bine, Carpenter and Barbat; there were also present the President, Dr. Hamlin, and the Secretary, Dr. Jones.

An application from the Pacific Wassermann Laboratories for advertising space in the JOURNAL was referred to the Council from the Publication Committee, which had rejected the advertisement. The Council, on motion, referred the matter back to the Publication Committee with the suggestion that the advertisement be accepted if the prices charged are not given in the advertisement and if it is stated that the advertisers are not practicing medicine.

In the matter of the Panama Pacific Exposition, on motion a committee of five was appointed to act with other similar committees and to confer with the directors of the exposition. The committee is to consist of the President, the Chairman of the Council and the Secretary of the Society, together with two additional members to be appointed by the respective presidents each year. The President, Dr. Hamlin, has appointed Dr. H. C. Moffitt and Dr. W. Jarvis Barlow to act on such committee.

The Chairman of the Committee on Public Policy and Legislation, Dr. Bine, brought up the various matters which had been referred to that committee by the House of Delegates, for discussion. They were discussed at considerable length, after which the Committee was, on motion, instructed to take steps to have the amendment to the medical law creating a state tax of two dollars ($2.00) a year on all practicing physicians as proposed in the resolutions introduced into the House of Delegates by the Los Angeles Association (see minutes in June JOURNAL, page 228), adopted by the next legislature and to have this fund used in the most liberal manner possible for the protection of the public in the enforcement of the law regulating the practice of medicine in the State of California.

The Council then adjourned at the call of the Chairman.

ORIGINAL ARTICLES

RABIES, AND ITS PRESENT STATUS IN CALIFORNIA.*

By WILBUR A. SAWYER, M. D., Director of the Bureau of the Hygienic Laboratory of the California State Board of Health, Berkeley.

Efforts to check the spread of rabies, or hydrophobia, among the dogs of California are greatly hampered by the difficulty in obtaining authoritative statements of fact regarding the present situation. Many controversial articles and conflicting theories are being read and discussed, and it is no wonder that the public and, to a large extent, the medical profession of California are unaware of the true state of affairs. This article will attempt to present the facts needed by those who are trying to check the spread of the disease among dogs and to make its transmission to people impossible.

The early part of the present epizoötic was reported by Black and Powers [1] in November, 1910, and the history of the disease up to April 1, 1911, was presented with the available statistics in an article published by myself [2] in July of that year. Since then the involved territory has been greatly enlarged and the most populous part of the state has been invaded. The center of maximum involvement has passed from Los Angeles to Fresno County and finally to San Francisco.

Figure 1 is a series of maps which shows at a glance how rapidly the disease has spread. The change in the shaded areas shows the increase in the number of counties involved, and the stippled counties represent an area invaded while the statistics here presented were being gathered together. It must be kept in mind that these maps, except some of the circles representing human deaths, are based on the results of laboratory examinations and not merely upon the interpretation of symptoms.

RESULTS OF LABORATORY EXAMINATIONS.

At the Hygienic Laboratory of the State Board of Health, in the year beginning April 1, 1911, and ending March 31, 1912, the heads or brains of 122 animals were received for examination. Five of the heads were in an advanced stage of decomposition and could not be examined. Sixteen gave negative results. Of the remaining 101 giving positive findings, 87 showed Negri bodies in the hippocampus or in other parts of the brain, and 14 others caused typical symptoms of rabies after inoculation into rabbits or guinea-pigs. The 101 positive cases were distributed among the different animals as follows: 2 men, 94 dogs, 2 cows, 1 horse, 1 cat and 1 ground-squirrel. Sixty-four people and seventy-eight dogs were reported as having been bitten by the animals which showed evidence of rabies on examination. As an indication of the increasing prevalence of the disease it will not be out of place to mention that in the two months following the period for which the statistics have just been given 55 examinations were made with positive results in 46 cases. The rapid increase of rabies is shown by the fact that 101 positive cases were examined in twelve months before April 1, 1912, and nearly half as many, 46, in the two following that date.

The specimens giving positive results during the year ending March 31, 1912, are divided between the counties as follows: Fresno, 29; Kings, 18; Tulare, 16; San Francisco, 12; Kern, 7; Merced, 4; San Bernardino, 3; Stanislaus, 3; Riverside, 2; Madera, 2; San Joaquin, 2; Imperial, 1; Contra Costa, 1; San Mateo, 1.

The number of positive examinations increased rapidly during the winter, which is our cool and wet season. This is sufficient answer to the very general superstition that the disease is caused by hot weather and to the claim frequently made that inability to get water is the cause of hydrophobia in dogs. By months the positive examinations are grouped as follows: in 1911, April, 3; May, 3; June, 4; July, 3; August, 5; September, 7; October, 10; November, 9; December, 9; in 1912, January, 15; February, 18; March, 15.

Many examinations for rabies have been made in municipal and private laboratories in California. Through the kindness of those in charge the results of these examinations have been obtained for publication and have been combined with the statistics of the State Hygienic Laboratory in the table below.

TABLE 1.
Results of Laboratory Examinations for Rabies, April 1, 1911, to March 31, 1912.

Name of Laboratory	Number of Examinations	Total Number Positive	Diagnosis from Negri Bodies	Diagnosis from Inoculation	Persons Reported Bitten by Positive Animals
State Hygienic Laboratory	122	101	87	14	64
Health Dept. of San Francisco	70	49	47	2	48
Health Dept. of Los Angeles	29	18	18	0	29
Health Dept. of Long Beach	2	1	1	0	1
Letterman General Hosp., San Francisco	11	8	8	5	0
Dr. W. Ophüls, San Francisco	5	5	5	5	4
Dr. H. Zinsser, Palo Alto	3	1	1	1	0
Dr. S. P. Black, Los Angeles	18	18	18	0	29
Dr. R. A. Archibald, Oakland	21	8	8	1	0
San Francisco Veterinary College	143	46	46	0	5
	424	255	239	28	180
Subtracted because examined in more than one laboratory	5	5	5	5	0
Corrected Total	419	250	234	23	180

POSITIVE CASES BY COUNTIES.

San Francisco	119
Los Angeles	30
Fresno	30
Kings	18
Tulare	16
San Bernardino	8
Kern	7
Orange	4
Merced	4

* Read before the Sacramento Society for Medical Improvement, June 18 1912.

Stanislaus	3
Ventura	2
Riverside	2
Madera	2
San Joaquin	2
Imperial	1
Contra Costa	1
San Mateo	1
	250

POSITIVE CASES BY ANIMALS.

Man	2
Dogs	240
Cats	3
Cows	3
Horse	1
Squirrel	1
	250

Those who claim that the disease will soon die out if unopposed will find food for thought in comparing the 250 cases of proved rabies of the year beginning April 1, 1911, with the 164 similar cases collected in my report of a year ago [2] for the seventeen months preceding. This gives a total of 414 positive cases examined in laboratories during the present epizoötic.

DIAGNOSIS BASED ON SYMPTOMS ONLY.

There can be little doubt that the laboratory examinations represent but a small fraction of the total number of cases of rabies in the state. Unless persons or valuable animals have been bitten or unless the disease is new in a region, many animals die or are killed and buried without its being considered sufficiently important to warrant the trouble and expense of removing the heads, boxing and icing them, and shipping them by express to the laboratory. Diagnoses based on clinical symptoms are not apt to be reported to the State Veterinarian or the local health authorities unless the suspected animals have come under the observation of a veterinarian or physician who realized that the officials should be notified. Replies to a circular letter to the health officers of the southern two-thirds of the state did not show any territory to be involved except the counties already shown to be infected according to the laboratory records. The cases reported as being diagnosed as rabies from clinical symptoms alone are probably duplicated in the record kindly furnished by Dr. Keane, State Veterinarian. To his office between April 1, 1911, and March 31, 1912, 285 cases of rabies were reported. Of these, 120 were based on laboratory evidence and are probably included in the statistics already given. The remaining 165 are additional cases reported by veterinarians on the basis of clinical symptoms. These 165 cases came from territory shown on the maps in Figure 1 to be infected. They are divided among the various animals as follows: dogs 142, cows 12, hogs 6, horses 3, goat 1, mule 1.

RABIES IN MAN IN CALIFORNIA.

The mortality among human beings seems very small when comparison is made with the death rate among dogs, which are the chief sufferers. Previous to April 1, 1911, five human deaths had been reported.[2] These are briefly reviewed below. The first of these preceded the summer of 1909, when the disease began to be prevalent.

1. A man, H. M. S., died with the symptoms of rabies in Pasadena on March 10, 1899, five weeks after being bitten in the face by his dog. Inoculation with brain tissue of the patient produced rabies in rabbits.[3]

2. M. E. C., a man, aged 30, died with the symptoms of rabies, in Holtville, Imperial County, on Dec. 12, 1909. He had been bitten by a cat.

3. J. S., a boy of 10 years, died with symptoms of rabies on February 21, 1910, in Los Angeles.[4] He had been bitten in the leg by a stray dog. Negri bodies were found in his brain.

4. J. B., a man of 62, died of rabies at Rivera, Los Angeles County, as a result of being bitten in the face by his own dog.

5. E. L., a girl of six years, died of rabies on Dec. 2, 1910, in Los Angeles, seventeen days after being bitten in the lip and nose by a stray dog. Intensive Pasteur treatment was begun, but the unusually short incubation period did not permit its completion and therefore it did not have time to produce the immunity needed for protection. Negri bodies were demonstrated in the head of the dog and later in the brain of the girl. Inoculation with brain tissue of the girl produced rabies in a rabbit.[5] This case was described in greater detail in my previous article on rabies in California.[2]

During the year for which the laboratory statistics are being given, April 1, 1911, to March 31, 1912, there have been six human deaths from rabies, bringing the total of reported cases up to eleven. That there were not more fatalities can only be accounted for by the large number of persons who availed themselves of the Pasteur treatment for the prevention of rabies. The remaining six cases are given below.

6. A girl of three years, M. L. C., developed the symptoms of hydrophobia (rabies) and died on June 27, 1911, near Tulare, Tulare County. The typical symptoms, including the spasms of the throat on attempting to swallow, were present and left no doubt as to the diagnosis. The source of the infection was not ascertained although careful inquiry was made by the attending physician, Dr. John B. Rosson, to whom we are indebted for our information.

7. A boy, aged 15, C. V. B., died of hydrophobia on August 27, 1911, in Los Angeles. From the report [6] of this case published by Dr. W. V. Chalmers Francis, attending physician, and from information kindly furnished by him through correspondence, the following facts have been briefly gathered together:

About nine months before the boy's death his pet dog, as well as several other dogs in the neighborhood, had been bitten by a strange dog. One or two of the animals which had been bitten were later killed on the suspicion of having rabies. The boy's dog developed an acute illness, supposed at the time to be poisoning, and died five to seven

days after the first symptoms. Among the symptoms of the dog were rapid breathing, salivation and weakness of the hind legs. The boy took entire care of the sick animal. Whether the boy was actually bitten is not clearly remembered, but one of the boys in the family was bitten by the dog at about this time, and the boy who died had open wounds on his hands when he was caring for the animal. The boy was a strong healthy youth who attended school during the day and acted as life-saver and swimming expert at one of the public baths in the evening.

On August 22, he began to feel feverish. The next day he took to his bed and complained of stiffness in his legs. He had no appetite. The following night he was unable to sleep. On the third day, August 24, he disliked to drink on account of trouble with his throat. He dressed himself and walked stiffly. The following day he became much excited and easily angered. His flushed face wore an expression of fear and anxiety. He complained of slight pains in throat, chest, and abdomen and of difficulty in swallowing. He could not sleep. He answered questions rather clearly, but contradicted himself frequently. Occasionally he had outbursts of passion followed by expressions of regret and apology. He had fear that he would be forced to drink and he exclaimed that he would not drink because it choked him. Drafts of air precipitated spasms of the face so painful that when the door was opened, the patient screamed in terror.

Other prominent symptoms were loss of power in the legs, loss of the patellar reflex, irregular breathing, irregular and rapid heart action and elevation of temperature to 102° F. Sometimes the patient would not breathe during a period as long as forty seconds. During the remaining two days of life the patient had frequent convulsions and fits of anger. There were noisy delirium, delusions, hallucinations, and unreasoning fear. At times he became rational and complained of burning in his throat, but he would refuse angrily to try to drink. Toward the end he developed emphysema of his face, neck and chest. He died on the 27th of August, the sixth day of his illness.

An examination of his brain performed by Dr. Stanley P. Black, revealed the presence of Negri bodies, and confirmed the diagnosis based on symptoms.

8. A man of 30 years, W. L. L., died of rabies on September 1, 1911, in Los Angeles. We are indebted to his attending physician, Dr. H. A. Johnston of Anaheim, and to Dr. Anders Peterson of the Los Angeles County Hospital for the following information: On June 15, 1911, the man was bitten on the hand by his own pet dog. There were about four small deep wounds. These were cauterized with nitric acid. A veterinarian who examined the dog stated that he suspected rabies and advised observation of the animal. The owner killed the dog against this advice, thus destroying further evidence, and refused to take antirabic treatment.

On August 30, 1911, 59 days after he was bitten, the man began to feel sick and tired and to yawn frequently. The following night severe symptoms began. He was taken to the Los Angeles County Hospital on August 31. When he arrived, he was semi-conscious and the spasms in his throat were so severe that he could not swallow or speak. He died on September 1, the third day of his illness.

9. A boy six years old, C. W. B., died of hydrophobia on February 15, 1912, in Santa Maria, Santa Barbara County. Dr. R. W. Brown of that city is to be thanked for furnishing us the important facts in the case.

On January 12, 1912, this little boy was playing in the road in the country near Santa Maria when a small black dog attacked him and bit him in the face and on the hand. The dog then went on its way and was not seen again. Four hours later the wounds were cauterized. On February 14th, one month after the biting, the boy was visited by Dr. Brown, who found his patient on the bed with an expression of extreme terror on his face. For four or five days the child had not been himself, being at first peevish and disinclined to play and later having spells of choking and of "seeing things" on the wall. During the doctor's visit the boy complained of thirst and asked for water, but, when given as little as a teaspoonful, he fell backward suffering agony from the spasm in his throat, and swallowing was impossible. Early the following morning the little fellow died.

10 A man of 21 years, F. A., died of hydrophobia on March 9, 1912, in San Francisco. Through the courtesy of Dr. F. R. Dray, attending physician, the following facts have been learned regarding this case. The young man was the owner of four dogs. One of these was bitten by a dog supposed to be "mad." The dog which was bitten developed rabies and bit one or more of the other three before it died. All four of the animals finally succumbed to the disease. While attempting to give the last of his dogs castor oil, the owner was bitten in the right thumb near the nail. This occurred on February 3, 1912, before the outbreak of rabies in San Francisco had received sufficient publicity to be generally recognized. The young man contented himself with cauterizing the wound with phenol two days after it had been inflicted.

On March 2, four weeks after the bite, he began to have pain in the right arm. Two days later he became very nervous and troubled and consulted a physician. He was unable to swallow some pills intended to quiet him. On the same day he was sent to the German Hospital. On admission he was unable to swallow liquids except with greatest difficulty. During the following night he was rational, but after that he had frequent periods of intense excitement, delirium, and convulsive twitching. He had hallucinations leading him to believe that there were various animals in his bed, and his face bore a peculiar drawn expression resembling a smile. Noises or contact precipitated attacks of twitching and rigidity of his muscles. There were no true convulsions. There was moderate fever. As he was unable to swallow,

nourishment was maintained by rectal feeding. I was invited to visit the patient on March 8th. The disease was far advanced and death was evidently not far away. The patient's face wore a markedly drawn and worried, or frightened expression and his open mouth was filled with foamy saliva. There was moderate cyanosis and the breathing was heavy. He was unable to articulate. The extremities were very weak and somewhat rigid. The patient died early on the morning of March 9th, eight days after he began to feel pain in his shoulder and six days after symptoms of nervousness began.

A post-mortem was performed and parts of the brain were sent to several laboratories for diagnosis. The results were uniformly positive for rabies. At the State Hygienic Laboratory, Negri bodies were demonstrated in the hippocampus. A rabbit and a guinea-pig were inoculated and both developed rabies. The guinea-pig showed symptoms of furious rabies for five days.

11. A man of 63 years, J. M., died of rabies on March 21, 1912; in San Francisco. On February 25th this man was bitten deeply in the left wrist and more superficially in the left foot by a dog on the streets of San Francisco. The wounds were cauterized half an hour afterward. The brain of the dog inflicting the wounds was examined at the laboratory of the San Francisco Health Department and was found to contain Negri bodies. After a delay of five days the patient came to the Laboratory of the Health Department on March 1, and was put under the Pasteur treatment with virus distributed through the State Hygienic Laboratory. On the 17th day of treatment, four days before the treatment would have been finished, the patient complained of pain in his arms and chest, but especially in his left shoulder. The location of the pain was probably due to the fact that the more serious wounds had been inflicted in the left wrist. He also complained of a general aching. The next day he took to his bed. His chief symptoms were loss of appetite, insomnia, nervousness, and pain in his left shoulder and chest. He had a mild fever reaching a maximum temperature of 99.2° F. The next day I had the privilege of seeing the patient. The symptoms were much as already described. The patient's mind was clear and he did not seem specially apprehensive. On the evening of the following day, March 20, more characteristic symptoms developed. There was difficulty in swallowing. The next morning he had convulsions and spasms. Chloroform was given for relief. The patient finally became comatose and died at noon, March 21, 1912. A portion of the brain was examined at the State Hygienic Laboratory and Negri bodies were found in the hippocampus. Animal inoculations were impossible as the specimen had been sterilized by embalming.

We are indebted to Dr. W. H. Kellogg of the San Francisco Health Department and Dr. Paul Castelhun, attending physician, for information regarding this case.

This is the second case in California where the Pasteur treatment was begun but was unable to save the patient because the incubation period was much shorter than usual and not sufficient for the development of immunity.

COURSE OF THE DISEASE IN MAN.

The chief symptoms of rabies in human beings have most of them been depicted in the cases already described. In the majority of the people bitten by rabid animals the disease does not develop even without treatment, but all of the cases which advance to the point of showing symptoms are fatal in spite of any treatment as yet known. By taking an average of a large number of cases it has been found that about 15 per cent of untreated people, who have been bitten by rabid animals, develop the disease, while all but 1.3 per cent [7] could have been saved by treatment. These figures are based only on cases of persons receiving significant bites from animals conclusively shown to be rabid. The mortality is highest from bites which are most severe and those inflicted nearest the central nervous system or large nerve trunks and from virus of special virulence for man, as, for example, the virus received from wolf bites. The wound inflicted by a rabid animal heals or fails to heal without being noticeably affected by the presence or absence of the virus. After an incubation period varying in man from 14 days to a year, or even longer, but in the great majority of cases lying betwen thirty and seventy days, symptoms make their appearance. There may be redness, pain, numbness, or itching at the wound or near it. Nervousness, irritability, and inability to sleep may be the only symptoms for a day or two. A moderate elevation of temperature is a fairly constant symptom. These earliest symptoms are usually followed within a day or two by marked nervous excitability and sensitiveness to external stimuli. A draft of air, a touch, or a noise may cause painful local spasms of the facial or other muscles, or general muscular spasms. Moderate difficulty in swallowing is followed, as the symptoms develop, by excruciating pain due to spasms of the throat brought on in greatest severity by any attempt to drink. The dread of these spasms will sometimes lead patients to scream at the sight of a glass of water or at the suggestion of drinking. These symptoms were early interpreted as fear of water and the disease was named hydrophobia. There are hallucinations and there may be violent fits of anger and even furious mania, but intervals usually occur in which the mind is clear. The breathing becomes irregular and the heart action is rapid. Finally paralysis becomes the predominant symptom and convulsive seizures, controllable only by general anesthetics, cease, and death ends the suffering. The course of the disease is usually between three and eight days from the first symptoms. The duration of the disease is shorter in the more severe form, known as the dumb or paralytic type, where the stage of excitement is not very marked, than in the furious type of the disease.

COURSE OF THE DISEASE IN THE DOG.

In dogs, as in man, the incubation period is long, varying from 8 days to one year, but seldom exceeding six months and usually lying between 15 and 60 days. As in man, about 15 per cent of the dogs bitten by rabid animals develop the disease. The symptoms in the dog resemble those of man in being chiefly the effects of greatly increased susceptibility of the nervous system to external stimuli. The first symptoms noticed are apt to be a change in behavior. The animal may be more affectionate than usual, but he is more apt to be morose and agitated. He tends to snap and bite, probably because of hallucinations. The voice is frequently changed. Soon difficulty in swallowing appears and paralysis of the jaws and hind legs is apparent.

Dogs fairly well advanced in the disease will frequently try to drink and they succeed in wetting their dry noses and tongues, but are usually entirely unable to swallow. The water runs back out of their open mouths. The paralysis gradually spreads to the whole body and the animal dies in a few days after the first symptom, usually in 4 or 5 days, possibly in 2 to 10 days. The symptoms of rabies vary greatly, and frequently some characteristic symptoms, such as the hanging of the jaw, may be absent.

The cases of rabies in dogs are arbitrarily divided into two merging types, furious and dumb rabies. This classification only serves to indicate whether the nervous symptoms show themselves chiefly in excitement and activity or in helpless

Fig. 2. Dogs showing symptoms of rabies.

The jaw is allowed to hang down and can be closed with difficulty, if at all. Figure 2 shows pictures of three dogs suffering from rabies.

They all show the dropping of the jaw, and some of the pictures suggest the muscular weakness, especially of the hind legs. The swollen dry tongue, the bleary eyes, and the emaciation cannot very well be made out in the pictures. The first in the series of four pictures shows a dog which came down with rabies at the Presidio of San Francisco, and I am indebted to Dr. John R. Barber for the opportunity of securing the photograph. The other three pictures were taken in Riverside and were kindly furnished by Dr. Geo. H. Tucker, Health Officer of Riverside County.

paralysis. The dumb form is as a rule the more severe and more rapidly fatal.

In the furious type the dog is apt to leave home and to travel long distances, running along aimlessly and attacking without warning animals or persons who may happen to be in his path. Such rabid animals usually look dirty and tired, and the beginning muscular weakness may show itself in a wavering gait. The dog may travel for many miles and for a couple of days before weakness brings it to the ground to die. Attempts to treat such dogs have resulted frequently in their biting the persons attempting to relieve their suffering.

As an example of the distances which rabid dogs

sometimes run, introducing their disease into new territory, the following case is of interest. A bull terrier left his home in San Francisco at 10 a. m. on April 21, 1912. No abnormality was noticed by his owners. The next day he killed and tore a dog and attacked a woman in Half Moon Bay, twenty-five miles or more from his home. The dog was shot and the head was sent to the State Hygienic Laboratory, where Negri bodies were demonstrated in the brain tissue.

CHARACTERISTICS OF THE DISEASE.

Rabies, or hydrophobia, is a specific infectious disease to which all warm blooded animals are susceptible. The disease can only be contracted through the introduction of virus from a previous case of rabies into a wound which enters or penetrates the skin and thus permits the infectious agent to come in contact with nerve filaments. The infectious agent, differing in this respect from other known causes of disease, spreads slowly up the nerves to the central nervous system, where it develops and produces characteristic symptoms leading in almost all cases, at least in all human cases and probably in all canine cases infected in the usual way, to death in from two to eight (or possibly ten) days..

The organism causing this disease has not been isolated, but many of its characteristics are known. It is small enough to pass through the coarser Berkefeld filters. Many consider the characteristic Negri bodies found in the brain tissue to be forms of the parasite and point to the evidence of internal structure shown by the grouping of the granules within these bodies.

The dog is the principal factor in the spread of rabies. Remlinger [8] tells us that the dog transmits the disease to man in 93% of the human cases. The virus is present in the saliva and is introduced by the teeth in biting, although it may be introduced into existing wounds. The virus may be present in the saliva for two or three days before the onset of definite symptoms, as has been shown by the experiments of Roux and Nocard.

The most virulent tissues of a rabid animal are the brain and spinal cord. The peripheral nerves and several of the glandular structures (salivary glands, pancreas, lachrymal glands, suprarenal capsules, and rarely the mammary glands) are infectious, but other parts of the body do not contain the virus. Most of the period of incubation is taken up by the traveling of the virus along the nerves to the central nervous system and, as a result, the incubation period, when inoculation has been made into the extremities, is longer than when the virus has been introduced near the brain.

METHODS OF DIAGNOSIS.

The diagnosis of rabies in man or animals can usually be based, with a small percentage of error, on clinical symptoms alone when the disease has advanced to a point where marked symptoms are shown. After death, examination of the body does not reveal any gross changes sufficiently characteristic to warrant the making of a diagnosis. There is apt to be marked rigor mortis. In dogs the stomach frequently contains foreign bodies such as grass, sticks, and stones, but this may occur in other diseases. The only conclusive post-mortem evidence is found through microscopic examination of nervous tissues. Important, chiefly as confirmatory evidence, are the multiplication of the cells of the endothelial capsule in certain of the nervous ganglia with more or less destruction of the ganglion cells. These lesions were described by Van Gehuchten and Nélis. Other changes of similar importance were described by Babès. They are the accumulations of newly formed cells around the ganglion cells in certain parts of the central nervous system.

Of far greater practical importance are certain small round or oval bodies which were discovered and described by Negri and bear his name. They are found chiefly and characteristically within the ganglion cells of the brain, but frequently are seen away from those cells. The finding of Negri bodies alone is considered by the highest authorities to be sufficient evidence on which to base the diagnosis of rabies. As a rule they are found most easily in the hippocampus but they can be discovered in other parts of the brain. The simplest way of demonstrating them, and the method used in most cases at the State Hygienic Laboratory, is to make, on glass coverslips, smears of gray matter

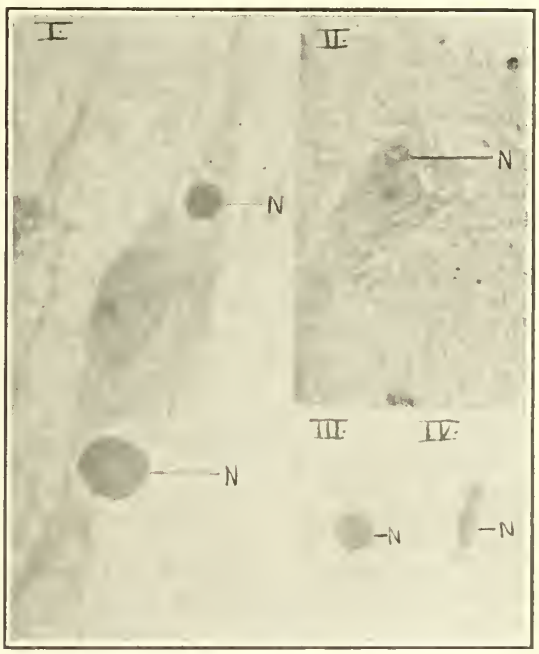

Fig. 3. Negri bodies (marked N) within ganglion cells and free. Magnification 800. Photomicrographs by Sawyer.

from the hippocampus, and to stain with methylene blue and fuchsin according to the method of Williams. The coverslips are then mounted in balsam and are carefully searched, for several hours if necessary. Figure 3 shows photomicrographs of preparations made in diagnostic work at the State Hygienic Laboratory.

In the first picture is a large ganglion cell from the hippocampus from a dog's head which was sent to the laboratory from San Francisco. In each

end of the cell is seen a large round body. These are Negri bodies and are an indication that rabies is present. As already stated, many suppose that the Negri bodies are the actual pathogenic organisms, but others consider them to be structures produced by the action of the toxin of rabies on tissue cells. The second picture is a photograph of a ganglion cell in a stained paraffin section from the hippocampus of one of the human cases which died in San Francisco. The Negri body is shown in the protoplasm close to the cell nucleus. The third and fourth pictures show free Negri bodies, one having the usual round shape and granules, which are indistinct in the picture, and the other having the more unusual oval shape.

Although Negri bodies, when found, are proof of the presence of rabies, failure to demonstrate them does not completely rule out the existence of the disease. The Negri bodies may be so few or so small, either because the animal was killed early in the disease or because of factors which we do not know, that their detection is not accomplished in several hours' search. In order to be able to make an absolute diagnosis, which in many cases is very important to persons who have been bitten or who own animals which have been bitten, it is necessary to inoculate brain tissue from the negative cases into laboratory animals, usually rabbits or guinea-pigs. The material in small quantity (0.1 to 0.2 c. c. of the suspension in physiological salt solution) can easily be injected through a small trephined opening into the space between the skull of the anesthetized animal and the brain. The animal should not be noticeably affected by this operation. If the brain tissue contains the virus of rabies, the animal will come down with the disease and exhibit symptoms in a varying length of time, usually 15 to 30 days in rabbits, although in some cases the incubation period is several months.

The laboratory examination for diagnosis is carried on at several points in California. The State Board of Health does this work at its Hygienic Laboratory in Berkeley, when the specimens are properly iced in some watertight container and are sent by express prepaid. When the head arrives in the laboratory the top of the skull is removed and the brain taken out. By dissection the hippocampus is secured and smear preparations are made as already described.

It is advisable, when animals are under suspicion of having rabies, not to kill them if they can be safely captured and confined for a period of ten days. The symptoms usually develop rapidly and are in most cases sufficiently characteristic to leave no doubt, and at least to enable a decision with regard to the advisability of Pasteur treatment for any persons bitten. A decisive diagnosis is also important so that dogs which were bitten by the suspected animal can be killed in order to prevent their developing the disease later and spreading it further. If the animal dies, the laboratory examination is apt to be more conclusive than when it is killed early in the disease.

TREATMENT OF RABIES.

When the symptoms of rabies have once made their appearance, the disease cannot be checked and treatment is of no avail except for the amelioration of suffering. The agony of the few days of intense suffering can be lessened by careful protection of the patient from noises and drafts and, in the early stages of the disease, by the administration of sedatives, but when the agonizing spasms are frequent and severe it is only humane to bring about relaxation and unconsciousness by means of ether or chloroform.

In the absence of a cure for rabies, the preventive treatment becomes very important. Cauterization of the wound has been found through long experience to diminish the chances of development of the disease, and this has been confirmed by experiment. The most practical and efficient method of cauterization is the application of concentrated nitric acid to the wound with a small stick or swab, as soon as possible after the biting. If the wounds are very large, as in the case of severe lacerations of the face, cauterization may be unwise and it may be necessary to depend on careful washing with bland sterile solutions and the intensive Pasteur treatment.

No method of cauterization saves a large enough percentage of cases to warrant the neglect of further preventive treatment. Fortunately, an efficient method of immunization was found for us by Pasteur. Soon after Pasteur began his studies on rabies he discovered that the virus was located chiefly in the central nervous system, and, after failing to grow the microörganism of rabies on artificial culture media, he conceived the idea that it could be grown in pure culture in the living animal. He therefore inoculated the brains of rabbits with brain tissue from rabid animals and kept his culture alive by transplanting it from rabbit to rabbit. The virulence for rabbits increased rapidly with these serial passages until the incubation period in rabbits became as short as six or seven days. Then no further change in virulence was apparent on further transplantation and the virus was known as fixed virus for rabbits, in contrast to the virus found in nature and called street virus. In several infectious diseases, for example, anthrax and chicken cholera, Pasteur had been able to produce immunity in animals by treating them with cultures of the infectious agent after the microörganism had been rendered less virulent by being grown on artificial media under unfavorable circumstances. Pasteur took the pure culture which he had produced for rabies, i. e., the spinal cords of rabbits which had just died of rabies, and attempted to render it less virulent in various ways, finally adopting as most practical a method of drying the cords in glass bottles over sticks of potassium hydroxide. After a cord has been dried in this way for eight days, it is no longer able to produce the disease, even in rabbits, which are specially susceptible to the fixed virus. Inoculation with such cords gives no symptoms but makes the person or animal inoculated resistant to a stronger virus, i. e., a cord which has dried a shorter time. By gradually increasing the strengths of the attenuated virus injected under the skin a considerable degree of immunity can be developed in an animal or person in from

eighteen to twenty-one days. This immunity continues to increase after treatment and as a rule reaches a high level fifteen days after the end of treatment. In order, therefore, to give the highest protection, the Pasteur treatment must be begun about thirty-six days before symptoms would develop; if that can be done, the treatment is practically certain. But as incubation periods shorter than 36 days are not very rare, the importance of losing no time between being bitten by a rabid animal and receiving treatment is apparent, although very few persons develop rabies if they have had time to finish the 21 days of treatment.

The duration of decided immunity after the Pasteur treatment probably averages about two years. Experiments on dogs have shown that 33% of them are immune after two years. Remlinger [8] concludes that persons who have taken the Pasteur treatment and are bitten more than one and one-half years later should again be immunized. He cites a case of death from rabies in a man who was bitten by a rabid dog four years after he had taken the Pasteur treatment.

Calmette has made a valuable addition to the Pasteur method. He introduced the keeping of antirabic virus in pure, sterile glycerin, thus making it possible to use fewer rabbits than before in manufacturing virus and to have nevertheless a sufficient amount on hand for emergencies. In glycerin the unground virus will remain practically unchanged in virulence for a month.

There are a number of radical modifications of the Pasteur method in use. Perhaps the most important of these is the method of Högyes who, instead of using virus attenuated by drying, dilutes fixed virus and begins treatment with extremely small doses, increasing them gradually. This method has been found to produce results almost identical with those of the classical Pasteur method. Other deviations from the usual methods differ chiefly in the way in which the cords are attenuated.

Much hope for a cure for rabies has been placed in the fact that the serum of animals immunized by the Pasteur treatment, especially when it is followed by injections of virus of full strength, has considerable power of destroying the virulence of fixed virus. Unfortunately the most potent serum yet tried has been unable to cure rabies and its best use at present is in the serum-virus mixture of Marie. He mixes fixed virus with not quite enough immune serum to neutralize it. A dose of this mixture immunizes patients more rapidly than the usual Pasteur treatment. Marie [9] has used this mixture during the first three days of the Pasteur treatment in the more severe cases under his care. In this way, he has shortened the course of treatment by five days, and has probably saved lives by hastening full immunity. Serum alone has failed to immunize or cure, and in the serum-virus method it acts probably chiefly by attenuating the fixed virus.

The Pasteur method, according to Remlinger [8] had been applied before 1907 to 131,579 cases with only 549 deaths occurring more than 15 days after the end of treatment. This indicates that the true failures were 41 hundredths of one per cent. of the total number of treatments. When it is considered that approximately fifteen per cent. of all untreated persons who are bitten by dogs known to be rabid, develop the disease, it is apparent, even when liberal allowance is made for the number of persons who take treatment without definite proof that the biting animal was rabid and also for the few persons dying during treatment or within fifteen days of the end of treatment, that many thousands of people have already been saved.

With these figures in mind, it would be surprising if any one bitten by a rabid animal failed to report for treatment. There is no question that all persons bitten far enough into the skin to draw blood should take Pasteur treatment. When the saliva of rabid animals has entered fresh wounds, treatment should be taken. If small, partially healed wounds of several days standing are wet with the virus of rabies the question of treatment is not so easily settled, for Babès and Vasilu [10] have shown by experiment that such wounds cannot be easily infected. When there is serious doubt, treatment should be advised.

PASTEUR TREATMENT IN CALIFORNIA.

The accepted methods of preventing dogs from spreading rabies, although proven by experience to be efficient, have not been applied with sufficient thoroughness to give the people of California the protection they need and should demand. As a result, it has been necessary for many persons, who have been bitten by animals which were either proved to be rabid or strongly suspected, to undergo the Pasteur treatment. The treatment usually involves an expense of about a hundred dollars, when obtained privately, and, when the patient cannot afford to pay for treatment, he is subjected to the expense of traveling to a branch of the State Hygienic Laboratory as well as the loss of time and cost of board during the three weeks of treatment. The economic loss due to rabies is therefore far in excess of the value of the cattle, horses, and dogs which die from the disease. In my previous article,[2] I collected the following statistics regarding Pasteur treatment in California from the entrance of rabies into California to March 31, 1911. One hundred and forty-one treatments were sent to California by the government and at least 20 came from other sources. Definite information was obtained regarding the administration of 125 treatments, 105 with government virus. One patient in the series died of rabies because the incubation period was so short that the treatment with government virus could not be completed. One patient showed a slight transient paralysis. With these exceptions the treatments were succcessful and free from complications.

During the period for which we are reporting in detail in this article (April 1, 1911, to March 31, 1912,) many Pasteur treatments have been given in the state. After September 1, 1911, all government virus sent to California for administration by the State Board of Health was ad-

ministered by the State Hygienic Laboratory and its branches. Therefore the statistics of the laboratory regarding Pasteur treatment begin with that date. Except for emergency purchases of parts of a few treatments, all virus used by the State Hygienic Laboratory came from the government. The chief facts regarding Pasteur treatments at the State Hygienic Laboratory during the year under consideration are given below.

TABLE 2.
PASTEUR TREATMENTS BY THE STATE HYGIENIC LABORATORY.
Sept. 1, 1911, to March 31, 1912.

Where and by Whom Administered	No. of Cases	Treatments Completed	Deaths	Diagnosis in Biting Animals Based on: Negri Bodies or Inoculation	Observed Symptoms	Suspicious History
Southern Branch, Los Angeles	5	4	0	5	0	0
San Joaquin Valley Branch, Fresno	6	6	0	6	0	0
City Health Dep't, San Francisco	22	16	1	18	1	3
City Health Dep't, Los Angeles	2	1	0	2	0	0
Letterman Gen'l Hosp., Presidio, S. F.	4	4	0	3	0	1
Total	39	31	1	34	1	4

The 39 cases came for treatment from the several counties as follows: San Francisco, 26; Los Angeles, 5; Tulare, 2; Fresno, 2; Orange, 1; Kern, 1; Ventura, 1; and Merced, 1.

The infection came from the bites of dogs in 35 instances, and in two cases from the bites of cats. The two remaining cases were inoculated with virus from a human case. In one instance the nurse attending this case of rabies accidentally injured his thumb while it was covered with the patient's saliva, and in the other instance the inoculation happened through an accident in one of the laboratories which examined the patient's brain after death. The one fatal case developed symptoms before the treatment was completed. There were no complications in any of the cases, except an abscess at the site of inoculation in one instance. This was not serious beyond the temporary inconvenience. A certain amount of local reaction usually occurs at some time during the treatment and most of it is probably due to anaphylaxis. In our experience this reaction has been most marked between the 7th and 11th days of treatment. There may be malaise and slight elevation of temperature for a day or two when the local redness and soreness is at its height.

The time between the infliction of the bite and the beginning of treatment averaged 7.1 days. The longest delay was 21 days and the shortest, one day.

The following table shows all cases for which full statistics could be obtained and which were treated in California between April 1, 1911, and March 31, 1912. The facts were kindly furnished by the physicians administering the treatment.

TABLE 3.
PASTEUR TREATMENTS ADMINISTERED IN LABORATORIES IN CALIFORNIA,
April 1, 1911, to March 31, 1912.

Where and by Whom Administered	No. of Cases	Treatments Completed	Deaths	Diagnosis in Biting Animals Based on: Negri Bodies or Inoculation	Observed Symptoms	Suspicious History
State Hygienic Laboratory of California State Board of Health.	39	31	1	34	1	4
Dr. S. P. Black,* Los Angeles	58	56	0	43	13	2
Dr. W. W. Cross,* Fresno	22	22	0	22	0	0
City Health Dep't,* San Francisco	4	2	0	3	0	1
Total	123	111	1	102	14	7

* Treatments additional to those officially administered with government virus for the State Hygienic Laboratory.

The 123 patients came from the various counties of California as follows: Los Angeles, 40; San Francisco, 30; Fresno, 23; Tulare, 10; Orange, 5; Kern, 5; Ventura, 3; San Bernardino, 2; Riverside, 2; Merced, 1; Kings, 1; Santa Barbara, 1.

The infection came from the various animals as follows: dogs, 112; horses, 4; man (not from biting), 4; cats, 2; and ground-squirrel, 1.

The longest delay before beginning treatment was 70 days and the next in length was 49 days. Excluding these two extreme figures the length of time betwen the biting and the beginning of treatment ranged from 1 to 29 days and averaged 6.6 days.

Between April 1, 1911, and March 31, 1912, the United States Hygienic Laboratory sent to California virus for 99 treatments. This virus was probably all used for patients included in the statistics just given. During the same period, three commercial houses, to whom I am indebted for these figures, distributed virus in California for 63 cases. Of these at least 54 are not included in the statistics already given. The 54 cases treated were situated in the following counties: San Francisco, 26; Los Angeles, 11; Fresno, 7; Tulare, 2; Orange, 2; Modesto, 2; San Joaquin, 1; Stanislaus, 1; Imperial, 1; Kern, 1.

Adding together the 123 treatments given in the last table and the 54 treatments sent out by commercial houses, we find that 177 patients were treated in the year ending March 31, 1912. Previous to that year at least 125 treatments were administered as already stated. This gives a total of 302 treatments in California since March 13, 1910, when, as far as I have been able to ascertain, antirabic treatment was first administered in California. Of the 302 persons treated, two developed rabies before the treatment was completed, giving a mortality of 66 hundredths of one per cent. No deaths occurred among those completing treatments.

CHART
SHOWING THE SPREAD OF
RABIES IN CALIFORNIA
BY COUNTIES
EXISTENCE OF RABIES PROVED BY STATE HYGIENIC LABORATORY.
ADDITIONAL COUNTIES, RABIES PROVED BY OTHER LABORATORIES.
NEW AREA, APRIL 1, TO MAY 31, 1912 PROVED BY STATE HYGIENIC LABORATORY.
HUMAN DEATHS FROM RABIES.
DEL NORTE
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
PLUMAS
MENDOCINO
GLENN
BUTTE
SIERRA
COLUSA
YUBA
NEVADA
LAKE
PLACER
YOLO
EL DORADO
SONOMA
NAPA
SOLANO
AMADOR
CALAVERAS
SAN FRANCISCO
TUOLUMNE
MONO
STANISLAUS
MARIPOSA
MERCED
MADERA
FRESNO
INYO
MONTEREY
KINGS
TULARE
SAN LUIS OBISPO
KERN
SAN BERNARDINO
SANTA BARBARA
VENTURA
LOS ANGELES
ORANGE
RIVERSIDE
SAN DIEGO
IMPERIAL
NOV. 2, 1909, TO DEC. 31, 1910
JAN. 1, 1911, TO AUG. 31, 1911.
SEPT. 1, 1911, TO MAR. 31, 1912.

As an indication of the increasing need for Pasteur treatment it is of interest that during the two months (April and May, 1912,) immediately following the period for which statistics have been collected, the State Hygienic Laboratory treated 66 cases in the several laboratories where antirabic treatments are administered for the State Board of Health.

THE PASTEUR INSTITUTE.

The large number of Pasteur treatments needed in California by the State Board of Health for administration to people who are financially unable to secure the treatment from their physicians, and the disadvantages of depending for virus on a source so far away as the government laboratory in Washington, D. C., led the State Board of Health to pass a resolution on May 18, 1912, authorizing the State Hygienic Laboratory to manufacture antirabic virus. On June 3, 1912, Dr. Donald H. Currie of the United States Public Health and Marine-Hospital Service inspected the Pasteur Institute, which had been established as a department of the State Hygienic Laboratory, and approved of the equipment and methods in use. Since that date all virus used by the laboratory has been of its own manufacture.

The virus is produced by inoculating anesthetized rabbits intracranially with fixed virus, chloroforming them when paralysis is almost complete and removing their spinal cords by pushing them out of the canal in accordance with the method of Oshida.[11] The cords are hung from silk threads over sticks of potassium hydroxide in Pasteur drying bottles and are kept in a dark cabinet. The temperature in the cabinet is maintained at 20° C. by an electric regulator. As the cords are cut day by day, the segments are immediately placed in glycerin and are stored in an ice chest until needed for administration or shipment to one of the branches. The virus is discarded if unused at the end of three weeks.

The treatments are administered at the State Hygienic Laboratory in Berkeley, at its Northern Branch in Sacramento, at its San Joaquin Valley Branch in Fresno, at its Southern Branch in Los Angeles, and also by deputized bacteriologists in the City Health Departments of San Francisco, Sacramento, and Los Angeles, and in the Letterman General Hospital at the Presidio of San Francisco. In order to receive free antirabic treatment from the State Board of Health, it is necessary to make application to the local health officer. He will apply by telegraph to the Secretary of the State Board of Health, vouching for the suitability of the case, financially and otherwise, for free antirabic treatment. If the Secretary approves, he will give instructions as to the branch laboratory to which the patient is to be sent.

METHOD OF SPREAD OF RABIES.

Rabies in California is harbored and carried chiefly by domestic dogs, but it is possible that wild animals will take a greater and greater part as the disease becomes thoroughly established. Coyotes are under heavy suspicion and there is strong testimony that the disease in California has been conveyed in a few instances by these animals, but laboratory proof is still lacking. The skunk, known to carry the disease in Arizona, has not been convicted in California. The only wild animals of California so far definitely proved to carry rabies are a ground-squirrel, which bit a girl in San Bernardino County, and a large gray fox which was killed in the mountains of Ventura County about the middle of April, 1912. This fox entered the tent where several campers were sleeping and ran over the bed, pulling the covers. The animal bit a man, who tried to push him away, and then escaped, but the next night the animal returned and was killed. The fox's head was examined in Los Angeles and showed many large characteristic Negri bodies. Dr. R. B. Durfee was good enough to send me the story of this case. Coyotes seem to have played a larger part in the spread of rabies in Oregon than in California. Dr. Calvin S. White, State Health Officer of Oregon, informs me that between April 1, 1911, and June 10, 1912, the thirteen animals whose brains were examined and found to contain Negri bodies were classified by kinds as follows: Five coyotes, five horses, two pigs, and one dog.

The rapid distribution of rabies by rabid dogs who run for long distances has already been illustrated. Much more rapid is the conveyance of the disease through the transportation of dogs during the incubation period over the railroads or in automobiles. Two recent examples of this method are striking and will be cited.

On May 7, 1912, a bull dog went mad in Berkeley and bit four children and a woman and was finally shot on the street in Oakland by a policeman. Three of the children were bitten in the face. Examination of the animal's brain at the State Hygienic Laboratory revealed Negri bodies. The dog's license tag made it possible to find the owners, from whom it was learned that the animal had been brought by train six weeks before, from Fresno, a heavily infected region, to Berkeley, which had previously been free from rabies.

On April 1, 1912, a San Francisco dog, which was known to have played with a dog proved rabid at the city laboratory, was taken approximately 300 miles to Likely in Modoc County by his owner, who was later joined by a brother. On May 7th, the dog began to show symptoms of rabies, and the next day he bit both men. The dog's head was sent to the University of Nevada where Negri bodies were found in the brain and rabies was produced by inoculating some of the brain tissue into an animal.

The stories of these two dogs show how rabies can jump over long distances and start outbreaks in new territory. When once established in a region containing many dogs, the disease spreads rapidly from animal to animal.

CONTROL OF RABIES.

In order to protect dogs, cattle and people from rabies several precautions should be taken. The roaming dog population should be diminished as

much as possible and every dog at large should be muzzled with a well fitted metal muzzle which projects beyond the end of the dog's nose and absolutely prevents biting. If the disease is thoroughly under control within a certain area, quarantine against dogs from infected areas should be considered. It has been proved possible to keep rabies out of isolated countries, such as Great Britain and Australia, by a six months' quarantine on all dogs.

Rabies is a disease very easily held in check by simple measures directed toward the control of the chief reservoir and distributing agent of the disease, the domestic dog. It is therefore a disgrace for any community to permit rabies to become prevalent within its boundaries.

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CLINICAL SYMPTOMS OF ALCOHOLISM AND ITS TREATMENT.*

By R. E. BERING, M. D., San Francisco.

Until within recent years but little interest has been taken in this subject, in consequence of which but meager information can be obtained from medical teaching or medical books. No organized attempt or scientific effort has been made to treat alcoholism with any degree of hope for a permanent recovery. But, as in other branches of medicine, much thought and study is now being given to the treatment of this disease. It has attracted the attention of states and nations where institutions for the care and treatment of those addicted to the excessive use of alcohol are established, and a permanent recovery of from forty to sixty per cent is obtained. With such a wonderful showing from the reports of public institutions where the patients are oftentimes the flotsam and jetsam of the world, no wonder such enthusiasm is manifested by those practicing this branch of medicine as a specialty with such possibilities before them.

In the limited time at my disposal I shall only touch on some of the clinical symptoms and treatment as come under my daily observation.

The fact that alcohol is destructive to nerve cells is undisputed, and the highest centers are the ones first damaged, thus throwing all concomitant parts out of adjustment; as a result inhibition is impaired and voluntary action is hampered—then serious trouble follows.

Where an occasional drink shows but little effect upon the individual, after a short time larger and larger amounts are required to satisfy the abnormal condition produced by nerve destruction and toxic irritation; deterioration of brain structure goes rapidly on until the patient is as positively sick as is one suffering from tuberculosis and without proper help cannot refrain from the inordinate use of alcohol, and if the attempt is made much mental excitement is the result.

A well marked train of symptoms appear that are just as classical as are the symptoms of typhoid fever, and are as follows: An intense nervous condition of dissatisfaction; ill at ease; an irritated reflex cough; a feeling of emptiness in the stomach that constantly craves and longs for something—the feeling or desire is not specifically for whisky, but an "indefinite something"; sneezing comes on with the regularity and severity of those addicted to the use of morphine; eyes and nose water; an irritation of the throat that causes the patient to go through the act of swallowing repeatedly with an excessive flow of saliva. In course of time, as the damage to the brain increases from the physical symptoms just mentioned, an equally marked series of mental symptoms appear. The patient, who previously had been of a jolly, humorous nature, seeing only the good in life and people, is suddenly noticed to be morose, always in a surly temper, taciturn, hardly if ever caring to meet others and talks but little. This is superseded by melancholia. Everything in life looks dark and dreary, he has lost his ambition and pride and ceases to strive to maintain the standard of living to which he is accustomed. Suicidal mania is next: the patient is always brooding over his future and sees no bright light to assist him in his daily struggle for existence, and from constantly dwelling on the dark side, finally, in a moment of deepest gloom he takes his life and another drunkard's grave is filled. It is a wonder more and more lives are not taken annually when we know how damaged are the higher brain centers.

Yet with proper care and treatment many of these cases are permanently cured and such thoughts as above mentioned are banished. Auditory and oral hallucinations are manifest. Truly a sad picture is now before us, but thanks to the activities of those interested in this work in the past few years, much hope can be held out to this class of unfortunates, and the time will come when the profession will display more interest in the subject than at present. One reason for so little interest is that this work has been left to the advertising faker and quack who made no pretense to scientific treatment or knowledge of what he desired to do other than to secure the dollars from an innocent but gullible public. But the treatment of alcoholism has now been placed in a class of medicine deserving recognition and is so recog-

* Read at the General Meeting of the San Francisco County Medical Society, May 14, 1912.

nized. Yet there are many physicians who scoff at the attempt to rescue this class from positive death and many years of a condition far worse than death, as the patient will be in a physically fit condition, but mentally dead; yet with so large a percentage of recoveries before us it is not just in any one to act the part of the doubter any longer.

The treatment is not stereotyped; far from it, but it is the individual study of each patient, after which proper medication is given. In a general way the following is the one successfully used by me for a number of years. Primarily it must be recognized that each patient is suffering from toxemia; this condition must be overcome before the patient is ready to start treatment. For this condition I use calomel and jalap for the bowels until free purgation is secured, followed by high enemas; dram doses of phosphate of soda in warm water each morning, this usually flushes out the alimentary canal and with the increased flow of bile gets the bowels in a good condition. Hot packs and vapor baths are used to secure free action of the skin, usually used every other night until sufficient elimination has been secured through this channel. The kidneys are looked after with any of the ordinary diuretics, depending upon the report of the examination of urine which must invariably be done as many incipient cases of albuminuria are thus detected and cleared up. After being satisfied as to the cleansing process, then strychnine 1/30 is given hypodermically every four hours until some action of the drug is noticed, when it is discontinued for several days then resumed and given at intervals of six hours. In conjunction with the strychnine, hyoscine hydrobromate is given in doses beginning with 1/400 of a grain every four hours and gradually increased to 1/100 of a grain every hour or two until a *mild* physiological action is secured, then kept at that dose for several days. Hyoscine, when properly administered, is as much of a specific in this disease as is antitoxin in diphtheria. It will absolutely remove all desire for alcohol and empirically has proven to restore, or at least assist, in the restoration of the damaged nerve cells, for after a course of hyoscine the faculties that have been most diseased soon regain their normal functions.

I fear some may say it is due to the cleansing out of the patient and a freedom from toxemia; no doubt, such is a factor in the case, but I am positive from years of observation, that it is due more largely to the action of the drug directly upon the brain center.

I wish to digress and call attention of the members present to the fact that while hyoscine is a safe drug when cautiously used, it is one of the most dangerous when not so used. It is particularly dangerous in those cases of over stimulation where the heart muscle is weak and ready to cease functioning. In delirium tremens I would caution against its use. Particularly where it is given in 1/50 grain doses to produce sleep, as it is prescribed by some physicians. I know of a number of deaths directly responsible to this practice. In my experience it is of no benefit in such cases, and should not be used.

The action of hyoscine is maintained for several weeks. In addition to the above, constant attention is given the emunctories; regular habit of living should be encouraged. Besides the administration of medicine, to my mind at least, enters now one of the important features of the permanent result of your treatment and that is the education that accompanies it.

Each and every one of these patients is down and out and needs encouragement and sympathy. Following the old motto, there is something good in the worst of us; it should be the duty of one doing this work to devote sufficient time to the study of the patient in order to discover this feature of good and use it as a lever to restore confidence in himself so necessary before definite results can be expected. It is difficult to express in words to what extent this can be carried out, but there are unlimited possibilities to assist in securing results that can be obtained in no other way.

A word of warning to the practitioner is that he should regard these people as seriously ill and in transporting them from one point to another, it should be done with an ambulance and the patient in a horizontal position, and not in a taxicab where oftentimes the patient is allowed to drop to the floor of the machine in a cramped position, thus crowding all the abdominal organs upon the chest and creating a pressure on the heart and lungs that is extremely dangerous. One case in mind when the patient was taken out of the taxicab after riding on the floor in the position described, was found to be cyanosed and with edematous lungs from which she died within a few hours. These patients also suffer frequently from an acute dilatation of the heart and should have the constant supervision of a competent nurse who can act immediately upon the first sign of such a condition arising.

I will close this paper with the admonition to regard patients suffering from an excessive use of alcohol as being seriously ill, and treat them accordngly.

Discussion.

Dr. McClenahan: I do not think that I can add very much to what Dr. Bering has said, as I have not had extensive experience in treating alcoholism, and none with this hyoscine method of Dr. Bering. The paper deals particularly with the initial treatment of the condition, and I think this is only a start in actual curative results. Before overlooking it, I wish to emphasize what Dr. Bering has said about the dangers of hyoscine, particularly in the larger doses. I have seen probably one, and possibly two cases terminate fatally when 1/50 of a grain has been administered hypodermically: one was a case of delirium tremens in a young man; the other a case of an old gentleman suffering from abstention symptoms of morphine.

It has always struck me that the physician's best attitude toward the question of alcoholism is to divide the subjects into four classes: 1st, the pathological physical changes resulting from the excessive or prolonged use of alcohol in the various organs of the body, as met by every physician; 2nd, pathological changes produced by alcohol in the nervous system, particularly such as neuritis,

and the various psychoses, as the deliria, hallucinoses, Korsakoff's disease, and dementia. Then the 3rd and 4th classes, constituting the principal ones that seek medical service for breaking the habit, as it were, viz., the habitual and periodic drunkards. With the periodic, his drinking is simply a manifestation or symptom of his condition or disease, just as the convulsion is a manifestation of epilepsy. The habitual drunkard becomes diseased by virtue of his drinking, and in both cases the most probable explanation lies in the fact that the use of alcohol is the expression of an unstable nervous organization. The individual is unable to successfully cope with his environment and resorts to alcohol for assistance. Consequently, the initial treatment, whether it be hyoscine or any other drug, I regard as only primary; for I think the time element is much more prolonged than is claimed by this line of treatment. I do not regard either kind of case as restored until he has abstained from drink for two or three years.

Another important factor to be considered in this class of cases is the question of control. They are all difficult to handle, for they are optimistic and as soon as the abstention symptoms subside, and they are over the acute effects of alcohol, they think they are well and insist upon returning to work. Then—generally a relapse, and the ultimate result is disappointing. When the use of alcohol has been in sufficient quantities or extending over sufficient time to produce organic changes in the central nervous system, I regard the prognosis as unfavorable in practically all cases.

Dr. Hoisholt: I did not come prepared to talk on this subject, but I will say that the attention to be given cases of alcoholism is not difficult in the acute stage; after tiding over the acute stage, the trouble lies in the management of the after cure. You all know what the state is doing at present for the inebriates. Somebody interested in alcoholics succeeded in having a law passed regulating the commitment of these cases without making any provision for the care of them. They are sent to institutions for the insane, where they occupy the same wards as the insane. The asylums are so crowded that the patients have to sleep on the floors and it is impossible to segregate the inebriates from the insane. Besides, most of the institutions have but a few large buildings, with exercise-wards where contact of inebriates and insane cannot be prevented. We have had experience with this law for a year and four months, and many cases have been received at the institutions. The law has made money flow into the pockets of the sheriffs, but I do not think it has done the alcoholics much good. The asylum at Stockton, which is inside the city limits, is not far from the nearest saloon. There is no law about keeping saloons away from asylums, only from universities and schools. There is a saloon on the corner, one block from the entrance to the asylum. Patients will stray over there, or to other saloons, and many of them come back drunk. They feel that it is a punishment to be kept with the insane, and this has been supposed by the originators of the law to deter them from future drinking. They spend a month or two working, are then paroled and allowed to walk on the grounds. They do well for a while, are given a pass to go into town, and it is only a question of time before they come back intoxicated. This is rather a sorry picture! The institutions are not able to do right by these cases, but the legislature passed the law without preparing for carrying out the work. Other states have shown us what California should do. In Germany, where I was in '03, they had several years previously given up sending inebriates among the insane, and here, as well as in several states in the East, they are now sending them to farms. Not only should they not be among the insane, but alcoholics should be with alcoholics, so that the bad as well as the good example can be held up to them as to a class. By giving them an education to strengthen the will-power (and that education should be extended over several years; a few months does no good), and by having them on farms where they can be kept away from towns and kept under control, the state would be doing its best for the inebriates. There is not one in a hundred inebriates that you can believe or trust as is at present being done at the state institutions for insane.

Dr. J. W. Shiels: I have had a varied experience with alcoholism. I was once in an asylum myself—as an acting superintendent. This was in Mavisbank Asylum, Scotland. There we treated many drunkards. We did not believe in any of the so-called "cures" and based our treatment upon time and imprisonment; and we did not think a man safe to follow out future treatment without supervision until he had been with us at least six months, even then we were by no means sure of success. We gave them every consideration, every moral uplift possible, super-nutritioned them, and permitted no mental or physical fag, keeping them out of temptation as long as possible, and then subjecting them to graduated parole. All were voluntary patients, but on entering the institution they signed a document which gave them the impression that we had a legal control and as a rule we seldom had difficulty in keeping them the full time. One patient I remember very well proved how useless all treatments may, on occasions, be. After his six-month stay he declared that he was cured! and that his duty called him home. He was all strength and confidence, and that made us very uncertain of him. We persuaded him to stay a little longer, telling him that although we had faith in him it was just as well to make assurance doubly sure. He stayed three months longer when the news came that his wife was seriously ill, and he insisted upon going to her to nurse her and—by his love and care of her—make up for his past life of selfish drinking. We let him go. When his wife died he was found drunk beside her bed.

If a man does not want to keep sober, all the hyoscine in the world will not make him so, for we cannot inject a conscience with a hypodermic needle. He must want to give up alcohol just as he might want to give up opium or morphine or any other drug habit. But hyoscine in the hands of Dr. Bering has been the beginning of many a true cure of alcohol habit, and I speak of what I know for I have followed him through at least three or four cases. Every case is watched very carefully in the most painstaking manner, and I have seen him sacrifice many a sleeping hour to control the action of hyoscine.

So it seems to me that we are very fortunate, particularly so, in having an honest medical man give all his time to the cure or to the consideration of drug habits, especially alcoholism. The work used to be done by men of little consequence, sort of medical confidence-men preying upon the weak. So we should by courtesy and attention and support show our appreciation and thanks to Dr. Bering when he brings back our patients in a sound state of health, trying with all their souls to control their habits and giving us a far better opportunity of being of value to them.

Dr. Bering: Replying to Dr. Hoisholt regarding the permanency of cures, would state that the reports of various public institutions for this work in the East and abroad show positive results of from 40 to 60%, which is verified by a follow-up system in all cases. The State Hospital at Knoxville, Iowa, report a recovery list of over 40%. The State Hospital at Foxboro, Mass., started in unpretentious quarters and with but little equipment; this has been increased to a section of land

and has three distinct departments, one for male patients, one for female patients, and the other for the incurables. Many of the eastern states are establishing institutions for the care of such patients. Replying to Dr. McClenahan regarding the time necessary for a cure, would state that for an average patient I find from one to two months sufficiently long to eliminate the desire for alcohol and get the patient in a proper frame of mind with improved physical condition, when they can care for themselves.

Referring to the question of education and the removal of irritating influences and how necessary it is as a part of this treatment, I will mention the following case: A young man, belonging to a wealthy family, who had secretly married, thus causing a separation between himself and his family. This worry and constant excitement kept him in a condition of whisky drinking and sobering up spells, going from bad to worse. Realizing the futility of medicine alone, I perfected a reconciliation between him and his family, which I now believe will be the means of assisting towards a right living on his part. These patients should be under the absolute control of the physician treating them, and away from family influence. I am now speaking of a class of patients who desire to be cured, and not the common drunk. A patient who will not co-operate with the physician is in the same position as the one suffering from a fractured bone who will not allow it to remain immobile, as a result, failure in both instances.

The great difficulty with this work is that the layman and physician have been led to believe the impossible could be performed, which, of course, is not correct; but with proper care and treatment enough permanent recoveries are made to justify the attempt with any case before condemning them to a future of misery, unhappiness and ending finally in a drunkard's grave.

In closing would urge upon the members present the great necessity for the state providing a hospital for the care of such cases, which would be of great benefit to the individual, his family, and besides prove of great economic value to the state.

300 Page street.

EXPERIMENTAL SURGERY OF THE HYPOPHYSIS CEREBRI.*

By H. EDWARD CASTLE, M. D., and H. A. L. RYFKOGEL, M. D., San Francisco.

Animal experimentation of the hypophysis cerebri is of twofold interest: (1) Because it is the only method by which we can come to an intelligent treatment of the affections of this organ in man: (2) Because we know so little about its function. Within the last quarter of a century much painstaking work has been done on the pituitary gland: many have tried to learn something of its function by its removal, others have tried to solve its mysteries by injecting its extracts. At present we must admit the functions of this gland are unexplained by the results which have been obtained by the various experimenters.

Gaglio,[11] Friedman and Maas,[10] Lomonaco and Van Rynberk,[20] Biedl and others assert it is not essential for the maintenance of life. They show the possibility of producing the same symptoms when the gland has not been removed. As the work of these experimenters was not corroborated by the use of the miscroscope we are led to believe they interpreted partial for complete hypophysectomy.

Dalla Vedova[29] found in his experiments few of the symptoms following removal of the pituitary gland that were described by others. In his first work he described paralysis in walking, which was spasmodic in character, muscular tremor, and opisthotonos, but declares they were all transient. Subsequently he concluded a fragment of the stalk is essential to maintain life in the animal. Gemelli draws from his studies and experiments on the hibernating marmot that the pituitary gland secretes an antitoxic substance and that its removal is compatible with life. Vassale and Sacchi[28] found their animals to have definite urinary symptoms, viz: alkalinity, low specific gravity, polyuria, but no sugar, and such symptoms as low temperature, loss of weight, asthenia, anorexia, disturbance in gait, convulsions and coma.

Michael Foster[8] in his text book of physiology says: ". . . but concerning the process which takes place in this gland, and the purpose of it as a whole, we know absolutely nothing." Jacob Lewin[18] writes as follows: "For some (Roth, Wildersheim, Corning, and Strumpell) the hypophysis is merely rudimentary and has no essential function." Schiff, Marienesco, and Wolf consider the gland essential for the sustenance of life. Olierer regards the secretion of the pituitary gland as one of the substances that regulate the blood pressure. We quote from G. W. Stewart's[26] text book of physiology, 1905 edition: ". . . the infundibulum is probably what remains of the gullet of the ancestors of the vertebrates. The pituitary body consists of two parts, the anterior lobe or hypophysis, and a posterior lobe or infundibulum. The former is derived from the buccal cavity, the latter from the fore brain. When the pituitary gland is removed the animal usually dies within a fortnight (cats and dogs). It has been said the pituitary gland undergoes hypertrophy after the thyroid gland has been removed. This is disputed by Schaefer. Extracts of the anterior lobe when injected are inactive. Extracts of the posterior lobe contain two substances, one a pressor and the other a depressor. The pressor is soluble in salt solution but insoluble in absolute alcohol and ether. When injected it causes a definite rise in blood pressure, which is due in part to constriction of the arterioles, and in part to an increase in force of the heart beat. These two changes are both produced by direct action. A second dose injected before the effects of the first have worn away is inactive. This distinguishes it from suprarenal gland extract. The depressor substance produces a marked fall in the blood pressure, even when it is injected during the rise of blood pressure which is caused by injection of the pressor substance."

Caselli experimented with various animals, including frogs, rabbits, cats and dogs, employing the pharnygeal, buccal and spheno-palatine routes of approach. His arduous work proved of little avail owing to the uncertainty of his methods. His problem was to ascertain to what degree the

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

secretions from the parathyroid and thyroid glands were influenced by that of the hypophysis. He came to the conclusion that the secretion of the latter had a controlling influence over that of the former glands. Not only did he realize the gland to be of physiological importance to the development of the animal, but also to the maintenance of life.

The buccal route was employed by Gatta [12] for the removal of the hypophysis to determine the relation between it and the thyroid. His experiments were with thyroidectomized cats, all of which died within nineteen days.

Hillion and Alquièr [14] studied the histologic changes in the other ductless glands after the injection of extracts of the hypophysis of the ox. They found practically no changes in the parathyroids, suprarenals, ovaries, islands of Langerhans, or spleen. What few changes did take place were not constant. However, in the thyroid there were constant changes manifest, viz: a diminution in the quantity of colloid present in the vesicles and a modification in the protoplasm in the tissues around the cells.

Tigerstedt [27] agrees with most authors that there is a definite relation between the pituitary gland and the other ductless glands. He has observed hypertrophy of it in myxedema and following thyroidectomy. This author thinks the pressor and depressor substances of which Stewart speaks are possibly products of decomposition, or are artefacts formed during extraction. In closing he makes this very significant remark: "From so many conflicting statements as to the effect of the extirpation of the pituitary we can not tell whether any disturbance from the loss of it alone follows."

Schaefer and Herring [25] claim the posterior lobe of the hypophysis yields a substance which acts specifically upon the kidneys, producing a marked dilatation of the vessels and an increase of urine.

Paulesco's [22] very careful work in Bucarest, from all appearances, has proven that part of the infundibulum is essential to the animal economy, that if only a microscopic portion remains intact the animal will survive indefinitely. These views are only corroborative, however, to those of Dalla Vedova, whose experiments in 1904 proved to him that the saving of two-tenths millimeters of the infundibulum was sufficient to maintain life. The conclusions of Paulesco are worthy of giving as recorded by him:

"1—Hypophysectomy causes death in about twenty-four hours.

"2—Removal of the epithelial (anterior) lobe is equal in result to complete hypophysectomy.

"3—Removal of all of the nervous (posterior) lobe is not followed by symptoms, and may be survived indefinitely.

"4—Opening the third ventricle causes no untoward symptoms.

"5—Periinfundibular injuries to the base do not rapidly cause death, but are the cause of definite symptoms, some of which are: hemiparesis, hemispasms, convulsions, incurving of the animal sidewise, etc.

"6—Separation of the hypophysis from the sella turcica is not harmful.

"7—Separation of the stalk from the base of the brain causes death the same as complete removal of the gland."

Redford and Cushing [24] in a set of carefully conducted experiments on animals have corroborated the experience of Paulesco. They have followed his technic in general, modifying it slightly to suit their fancy. Their animals have lived slightly longer after operation than did those of Paulesco.

Paul Clairmont and Hans Ehrlich [4] have endeavored to learn of the practicability of transplanting the hypophysis cerebri into a host. They experimented on rabbits, guinea pigs, and dogs, using the spleen and abdominal wall for the field of implantation, and making the grafts between the organ and reticulum of the spleen and between muscle and fascia in the abdominal wall. Their observations were made between ten and sixty days. In no case was the grafted gland present in sufficient quantity to cause one to presume it might be functional. The investigators suggest their contemplation of changing the metabolism of animals prior to implantation of the hypophysis by removal of some of the other ductless glands.

Crowe, Cushing and Homans [2] while not completing their observations, had some definite results from the homogeneous implantation of the hypophysis in hypophysectomized animals. They found in seven such implantations that there was a marked abatement of the symptoms of cachexia hypophyseopriva and death was in abeyance for an appreciable time.

ANATOMY (DOG'S HYPOPHYSIS CEREBRI).

The hypophysis cerebri rests in the sella turcica, which in the dog is merely a shallow fossa. The bony boundaries are not well developed. In front, the olivary process is ill-defined; the anterior clinoid processes are absent. On either side are the cavernous sinuses, in which are the carotid arteries, oculo-motor nerves, trochlear nerves, abducent nerves and the ophthalmic division of the trifacial nerves. Posteriorly is the dorsum sella, a small prominence, which has no clinoid processes. The floor of the sella turcica is covered with dura mater, but there is no diaphragma sella to roof the fossa, as there is in the human.

The hypophysis has three component parts, viz: 1st, the infundibular stalk; 2nd, anterior lobe; 3rd, posterior lobe. The two lobes are separated from each other by a cleft, and united to the brain by the stalk. The anterior lobe partially envelopes the posterior lobe. The latter is firmly adherent to the dura mater at the posterior part of the sella turcica. Owing to a backward bending of the infundibulum the lobes rest in a plane posterior to the stalk, rather than inferior to it as obtains in the human. The lobes are situated between the third ventricle above and the dura of the sella turcica below. On either side somewhat anteriorly are the carotid arteries branching into the middle and anterior cerebral arteries.

The infundibular stalk is the attenuated down-

ward projection of the tuber cenereum; thus we see the stalk is in intimate relation with the third ventricle.

MICROSCOPIC ANATOMY.

The anterior lobe is composed of glandular substance surrounded by epithelium, somewhat similar to the structure of the parathyroids. This lobe is possessed of two parts, a corticle and a medullary. The condition is similar to the one existing in the pancreas and suprarenal glands. The posterior lobe is composed of neuroglia, blood vessels, and connective tissue. It is surrounded by epithelial cells which extend high along the walls of the stalk. The greater part of the blood supply of the anterior lobe is derived through the stalk; while the posterior lobe derives its supply of blood from the vessels which enter it through its firm attachment to the upper part of the dura lining the dorsum sella.

EMBRYOLOGY.

As in the anatomy so also in the embryology, the two lobes of the hypophysis are distinctly separate. The posterior lobe and the infundibulum are of neural origin, being a ventral diverticulum from the primitive neural tube. The anterior lobe is developed from the stomodeum as a diverticulum, known as Rathke's Pouch. This diverticulum generally becomes disconnected from the buccal cavity. When it does persist it is termed the cranio-pharyngeal canal. *A priori,* it will be seen both lobes are of ectodermal origin.

Our problem consists in the implantation of the pituitary gland of healthy animals into various organs of healthy animals of the same species.

1st series: Twenty healthy, medium size dogs were selected, ten were donors of their hypophyses and ten recipients of the same. Under the most careful precaution to avoid contamination from bacterial or chemical sources, the two lobes of the hypophysis were removed with their accompanying stalk in toto, and implanted immediately into the subdural spaces of the several recipients.

2nd series: The three component parts of the hypophysis cerebri were removed without mutilation from five healthy, medium size dogs and immediately implanted in the substance of the right frontal lobe of the cerebrum of the recipients.

3rd series: In the medullary cavity of the right femur of each of five dogs the two lobes and infundibulum of the hypophysis cerebri were, without separation, implanted.

4th series: Three medium size dogs suffering from hypopituitarism, due to partial removal of the gland, were used for the donees of the total hypophysis. In two instances, the grafts were made in the subdural space; in one case, in the substance of the right frontal lobe of the cerebrum.

In our work we have followed quite closely the method of Paulesco, modifying it to suit our convenience. It is in detail as follows:

General preparation of all animals and technic of the removal of the pituitary gland. Each animal is kept for two weeks prior to his operation, in order to accustom him to his new environment and to ascertain if he is free from disease. The evening before operation he is given two ounces of castor oil and nothing to eat. One-half hour before operation morphine and atrophine are given, the dose depending on the size of the animal; generally speaking, it is 1/5 of a grain of morphine sulphate and 1/100 of a grain of atrophine sulphate. The head is shaved and washed in hot bichloride solution, the strength of which is 1:1000, then dried and three coats of tincture of iodine are applied. The anesthetist holds the animal between his legs until narcosis is produced, after which the animal is fastened to the table with his abdomen downward and the head resting on a sandbag which is four inches in height. The end of the table on which the head rests is elevated to the extent of eighteen inches. After screening the anesthetist from the field of operation, the animal is covered with sterile linen. Through the opening in the sheet there appears only the field of operation, which is covered with a towel wet in a solution of bichloride of mercury, the strength of which is 1:10,000. This towel is cut to correspond with the proposed skin incision. The skin is incised over the saggital suture from ½ of an inch posterior to the glabella to the inion. A second incision is made perpendicular to this extending from it to the zygoma, midway between the eye and the ear on the side of approach. The cut edge of the towel is sutured with closely placed interrupted sutures to the edge of the skin along the incision. Before opening the skull on the side of approach the scalp on the opposite side is retracted and a large decompression made, removing nearly one-half of the skull, thus giving ample room for the free mobility of the brain without injury to it from pressure. After opening the dura widely the muscles are placed over the defect without suturing and the skin is permitted to retract into its normal position. On the side of approach, the temporal muscle is severed one centimeter from its upper attachment and then removed from the side of the skull with a periosteotome down to its insertion on the coronoid process of the mandible. The zygomatic arch is displaced by severing it at either end with a Horsley bone forceps. A trephine opening is made over the parietal eminence with a Doyen drill and burr for the use of the rongeur, which removes the bone in a downward and slightly forward direction as far as the base of the skull. The center of the lower end of this opening is about opposite the coronoid process. The brain with the dura intact is gently lifted from the temporal fossa with a smooth spoon retractor. By hooking up the dura with a dural hook it can be readily incised with a Freer's nasal knife without injury to the arachnoid and pia membranes. The incision in the dura is one and one-half centimeters long. Into this incision the unprotected spoon retractor is introduced and pushed gently inward, hugging the floor of the temporal fossa to avoid crowding the brain ahead of it. When the cavernous sinus is reached the retractor is slightly elevated and advanced inward one centimeter farther. By carefully raising the brain a little higher there comes into view the occulo-motor nerve, the optic

nerve, the internal carotid artery with its middle and anterior divisions, and the pituitary gland.

The gland is freed from its cohesion to the floor of the sella turcica and from its firm attachment to the dorsum sella, by a small round pointed probe. The stalk is cut from the brain with a small sharp curette and the gland lifted out of the cranium. The brain is permitted to settle back into its normal position, and the muscles and skin are sutured into their respective places, without drainage. A moist 1:10,000 bichloride dressing is applied and held in place by a crinoline bandage. The animal is placed in the heating chamber on the table, the head of which is still elevated, where he remains for several hours. All pain is relieved by morphine sulphate. The following day the dressing is changed to relieve constriction, and the animal is fed milk.

Technic of Implantation.

Series No. 1. A trephine opening is made in the skull over the right frontal lobe of the cerebrum. After incising the dura mater to the extent of one centimeter, the pituitary gland is pushed downward nearly to the base of the brain and left resting between the dura and arachnoid.

Series No. 2. Dura is opened through a trephine vent. By means of a blunt elevator the substance of the right frontal lobe of the cerebrum is separated to the depth of two centimeters; in this wound in the brain substance the three component parts of the pituitary gland are implanted. The dura and skin are closed over the defect, without drainage, by sutures.

Series No. 3. An osteoplastic flap one and one-half centimeters square is removed from one surface of the right femur, including the wall of the shaft to the medullary cavity. In the cavity the entire hypophysis is grafted after all hemorrhage is controlled. Then the osteoplastic flap is sutured into place.

Series No. 4. In this series the technic is analogous to that employed in series No. 1 and No. 2.

Results: As the end results are the same in the various experiments we are here reporting, we can justly give them together. At the expiration of three weeks the grafts were inspected. Nothing remained which was demonstrable either macroscopically or microscopically. The glands were completely absorbed and newly formed connective tissue was occupying their former locality. As to the results of removal of the hypophysis of dogs, which is merely a side study, our work has been corroborative of Dalla Vedova's and of Paulesco's. All of our animals which had the entire stalk removed succumbed within forty-eight hours, some as early as twenty-two hours. Those retaining part of the stalk of the hypophysis lived an indefinite length of time. None, however, lived over nine months after the operation.

We are very reluctant to offer our results, and do so merely as preliminary to a more valuable report we trust we may make at a subsequent time. Our work has been pursued very carefully, but it does not represent either time or quantity sufficient to make it authoritative. The facts we have obtained are only pertinent to a special species of animals operated under special conditions. The conflicting results reported by various experimenters prompt us to comprehend the complexity of the subject, and to feel that under different conditions we may obtain diverse results.

Conclusions: The hypophysis cerebri is situated anatomically in such a position that its removal by different workers is prone to be inducive of varying results. Any insult to the base of the brain may be followed by grave symptoms. The operation of hypophysectomy when performed on the dog is not difficult of execution. It has been performed by us in less than twenty-five minutes. It is an operation involving a great amount of tissue. The skin incision, the detachment of all the muscles from the cranial vault, the great bone defect that must be made on either side of the head, the cutting of the dura and withdrawal of the cerebral fluid, the dislocation of the brain, and the separation of the hypophysis from the brain, make it an operation which, in the majority of cases, causes many symptoms of various magnitudes. Symptoms so produced are not correlative to those of hypopituitarism. Owing to the delicate organization of the pituitary gland it is not endowed with vitality sufficient to maintain it when grafted, long enough to permit of its gaining nourishment capable of its sustenance.

A priori, when the hypophysis cerebri of the canine is implanted into organs whose blood supply is the best, it will be absorbed by the surrounding tissues, therefore will not functionate when grafted. Notwithstanding what has gone before, we still believe it may be possible, by means of more proficient technic, to transplant the gland and have it functionate in the recipient.

We believe the pituitary body is a ductless gland which has an internal secretion closely correlated to that of some of the other ductless glands, especially to that of the thyroid, ovaries, and testes. Our experiments have proven to us that the pituitary gland is essential to life, but they have not proven that part of the gland is capable of the maintenance of life indefinitely, without symptoms. We believe, as do the majority of experimenters, that the secretion of this gland has a controlling influence over the nervous system; in what manner this influence is initiated we do not theorize. This conclusion is drawn from the fact that hypophysectomized animals usually suffer from various nervous disorders. The anterior lobe, when *in situ,* has the greater control over the other ductless glands, for when it is extirpated there are often changes in the ovaries, testes, and thyroid. There is also often manifested a general adiposity and irregular changes in the urine. This cachexia hypophseopriva is not produced by the removal of the posterior lobe.

With the vast amount of careful investigation that is now in progress we believe two very important questions relative to the pituitary gland will soon have been answered, viz: 1st, what is its function, and, 2nd, what is the value of its transplantation.

Discussion.

Dr. [illegible] D. Tait, San Francisco: I want to congratulate the reader upon his persisting and painstaking efforts. Such work is difficult under the most favorable conditions, even for such a skilled technician as Dr. Castle. Before speaking on the question under discussion I want to sound a note of warning for those who contemplate entering the field of experimental research. We owe it to those who have preceded us, as well as to those who will follow, to delve into our libraries most thoroughly, especially into the foreign files, prior to attacking any problem, and more particularly prior to burdening the Index Medicus. This precaution is more especially indispensable in problems relating to the ductless glands (Biedl gives over 5000 references). At this price only can one hope to avoid the mistake we have all made and to which I certainly plead guilty: the repetition of useless experiments. A more careful review of recent biological monographs would surely have saved Dr. Castle many hours of experimentation. The two salient points in Dr. Castle's communication are, 1st, the fate of isografts, 2d, the route of implantation. In determining the fate and therefore the value of glandular grafts experimenters consider 1st, the preservation of form (histological test), 2d, the preservation of function (physiological test). A successful graft must respond to both of these tests. While autografts, especially in conditions of created deficiency (Halsted) may succeed in a high percentage of cases, isografts (parathyroid, hypophysis, suprarenal, testis, etc.) invariably fail. The only exceptions are with glands from closely related animals (from the same litter, for instance) or with fetal tissues. Hence the total abandonment of graft experiments by Carrel (kidneys, limbs, etc.), Frouin or Paris and Stich of Bonn. The difficulty is not one of technic, it is biological. Little unfortunately is known of the interreactions of foreign tissues. This problem is engaging the constant attention of Carrell and his brilliant Swedish assistant, Ingebrigsten, whose most recent findings seem to indicate that hemolysis may explain all and thus furnish the much needed test whereby the grafting properties of tissues may be accurately determined.

Now as to the 2d point in Dr. Castle's paper. A long list of published failures in gland implantation has shown the numerous advantages of the preperitoneal space or within and behind the rectus abdominis. It is entirely unnecessary to resort to the subdural route in grafting hypophyses. Cushing's unsuccessful human case is additional proof of this fact. The graft cannot be watched in such a location and, furthermore, its subsequent removal (physiological test) cannot be accomplished as satisfactorily as in the usual site for grafting. I have been actively occupied with the subject of grafts during the past year and the experience thus gained, added to the benefits of close relations with several notable experimental laboratories, prompts me to suggest that practitioners place less confidence in text-books and follow more closely the work of physiologists and biologists.

Dr. H. A. L. Ryfkogel, San Francisco: I had the pleasure of assisting Dr. Castle in this series of experiments and as Dr. Tait has courteously said, the greatest possible technical care was taken. It was interesting to note the great amount of displacement which could take place in the canine cerebrum without doing great damage. In some of our cases we thought at first there must be a mistake in the statement that removal of the hypophysis was necessarily fatal until miscroscopic examination showed that minute remnants still remained. In regard to the necessity of preliminary reading before making experimental work, I would add a little to Dr. Tait's requirements, a search of the literature should not only be undertaken but should be very carefully carried out. Dr. Castle was thoroughly familiar with the literature of hypophyseal transplantation and his reading of Hans Ehrlich's work suggested to him his line of experiments. Ehrlich had done his transplantations into the abdominal organs and walls and Dr. Castle thought it would be interesting to note the results of similar transplantation into closely allied tissue such as brain and into highly vascular tissue of partially embryonic type such as red bone marrow. In his implantation of isografts it has been found that where the organ has been first removed the graft may live. Thus in dogs in whom the parathyroid has been removed life may be indefinitely prolonged and tetany avoided by the implantation of a parathyroid isograft. In closing I would like again to emphasize the necessity of accurate preliminary reading in experimental work.

Dr. Castle, closing discussion: I took it for granted that every one present was here for the purpose of scientific discussion. I am sorry to learn there is one exception to this. It is very shameful that the value of this paper which has opened so many avenues for discussion has been greatly lessened by a personal attack. True criticism is of the greatest value and is appreciated by the most learned. It is for this we meet and confer together. No one, in discussing a paper, has authority to introduce material which is entirely irrelevant to the subject. I am sorry Dr. Tait has not read sufficient to make it possible for him to talk intelligently, at least in a slight degree, on some of the many phases of this work that have been set forth in the paper I have just read. I agree that every one doing experimental work should have thorough knowledge of the literature pertaining to the subject and it is my extreme pleasure as your colleague to say that I am conversant with all that has been written relative to the pituitary gland since the time Von Michel and Horsley made their primitive surgical attacks on this part of the animal economy.

Harvey Cushing, who has done by far the most praiseworthy work in the experimental surgery of the hypophysis cerebri, corroborates our judgment and technic, which speaks well for our carefully planned procedures. It is well known by all who read intelligently that the most simple problems relative to the pituitary gland are not solved. Thus we find Paulesco and Gemelli diametrically opposed in their views as to the most obvious question concerning the gland, viz: its essentiality.

If Dr. Tait would spend his time in thoughtful, scientific reading instead of malicious criticism of those doing commendable work it would not be necessary for him to make remarks that bring shame upon your society and disgrace upon himself.

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CLINICAL VALUE OF THE ARNETH METHOD OF BLOOD EXAMINATION.*

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For some reason the method of leukocyte examination of Arneth has received surprisingly little attention in this country in the eight years which have elapsed since its introduction, and it is with the hope of arousing interest in what appears to be a procedure of value that this paper is presented.

There is no intention of giving a detailed review of the literature, nor is there occasion for such, owing to the publication last year of a complete résumé of the subject by Schilling-Torgau [1] which carries a full bibliography to date and is a most valuable contribution. However, it is perhaps advisable to present as concisely as possible Arneth's ideas, and to make mention of some of the more important modifications and applications of the method.

Arneth's theory is probably known to you all. He supplements the ordinary leukocyte count with a more detailed study of the neutrophilic cells. These he divides into five chief classes according to the number of divisions or "pieces" of the nucleus. His assumption is that the younger the cell the fewer nuclei will it contain (it being descended from the uni-nuclear myelocyte), and that as it ages the nuclei divide and become more numerous. He further assumes that the older the cell the better its protective ability in combating infections and toxemias. When such conditions do occur, the older cells (with many nuclei) are destroyed first and their places taken by younger generations (with fewer nuclei). From a study of the normal he found that the percentages of the cells in the five classes maintain a strikingly constant ratio to each other, the middle classes, with two, three and four nuclear parts, containing the bulk of the cells, and the first and fifth comparatively few. In the majority of infections he found a decided increase in the number of cells in the first and second classes, with a corresponding decrease in the others. This change in the character of the neutrophilic blood-picture he called a "shift to the left"—"die Verschiebung des neutrophilen Blutbildes nach links." In tuberculosis, to which he gave especial study, he observed that the more severe the infection the more marked was this shift to the left, and concluded that as a prognostic indicator the neutrophilic blood-picture was of peculiar value.

His first report, in the form of a monograph [2] based on some 276 blood examinations, appeared in 1904, immediately after a preliminary communication.[3] During that year he published a number of papers, containing tables selected from his monograph, showing the neutrophilic changes found in carcinoma,[4] in cases just before death,[5] in pregnancy and the puerperium,[6] and in artificially induced infections and intoxications in rabbits.[7]. In 1905 his second monograph appeared, embodying his findings in tuberculosis.[8] His papers of the next five years, with the exception of some work on leukemia, were devoted to controversial discussions with his opponents.

With these discussions we are not concerned here. One of the chief arguments against Arneth's idea was that the polynuclear appearance of the neutrophiles was an artifact due to the breaking up of the nucleus in the fixation and staining. The constancy of the normal ratio, together with the work of v. Bornsdorff,[9] Gothein,[10] Lewis,[11] and others, has disproven this. Whether the true age of the neutrophile can be told from the configuration of the nucleus is less certain, although all are unanimous in conceding that the youngest normal neutrophile in the blood is one having a single horse-shoe shaped nucleus. Work done along the line of determining the relative phagocytic ability of the five classes has not been productive of any consistent results.

There are three chief modifications of the method: the original Arneth, the nuclear count of Wolff, and the estimation of the first class alone.

The original classification of Arneth was composed of some twenty subdivisions of the five classes and naturally proved too cumbersome for practical use. These subdivisions have been abandoned and the division into the five main classes is the method principally adopted at present.

The nuclear count of Wolff [12] was the calcula-

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

tion of the number of nuclear particles in 100 neutrophiles. This has received but little attention and is not approved of by Arneth [13] who demands a closer analysis of the nuclei than can be obtained in this way.

The third modification, which is one of value, consists in the estimation of the percentage of the cells of the first class only. Changes in the blood-picture are earliest shown here, and in consequence many hold it to be the only class of importance and disregard entirely the others. Sonnenburg and Kothe and their followers [14-20], and independently Zangemeister and Gans,[21] advocate this method and use it advantageously in surgical conditions. Pappenheim and Schilling-Torgau advise a closer study and a sub-division of this first class.

One serious disadvantage with the original Arneth method is the difficulty in recording results graphically. Arneth realized this and took what he called an "index"—which was the sum of the first and second classes—as a standard for comparison. The index used more widely in this country is one proposed by Bushnell and Treuholtz [22] (although Lewis [11] claims priority) which is the sum of the first, second, and one-half the third classes. The two modifications mentioned above aimed to overcome this difficulty by giving results in the form of a single number which could be readily charted. The users of the last method particularly, have shown by curves the relationship existing between temperature, pulse-rate, total white-count, and percentage of cells of the first class, plotting the respective curves together in a very simple manner, beautifully shown in their papers.[15 16 17 19]

Observations on the appearance of the Arneth phenomena in disease have extended over a fairly wide range, but the work most promising in the way of practical results has been that done on tuberculosis and on appendicitis.

With but one exception all who have studied the nuclear count in tuberculosis are agreed with Arneth that a shift to the left is a constant finding, and that the estimation of this shift from time to time affords considerable prognostic aid. Solis-Cohen and Strickler,[23-25] alone of all observers, report results at variance—an increase in the shift to the left when the patient is improving. In this country excellent papers have come from Klebs and Klebs,[26] Bushnell and Treuholtz,[22] Minor and Ringer,[27] Williams,[28] and Margaret Reed Lewis.[11]

The work on appendicitis [14-18] has come mainly from one clinic, that of Sonnenburg in Berlin, although papers from other sources are beginning to appear.[20]

Observations in other conditions have been scattering, although mention should be made of a study of the neutrophiles in 17 cases of severe malaria by Gothein [10], and of the work on typhoid by Bucalossi.[29]

The present work was undertaken wholly from the clinical side to determine, first, the occurrence of the phenomena as reported, and secondly, whether practical use could be made of such findings. As far as the first question is concerned, the results confirm beyond a doubt the contentions of Arneth and the majority of others in regard to the characteristic changes in the blood-picture. For the answering of the second question, more data is necessary.

The question of the use in diagnosis of such neutrophilic study has been purposely omitted for the present. All writers who mention this point at all state that little if any benefit can be derived from it.

The material so far has consisted of 266 counts, made on 117 individuals, including normals, tubercular, typhoid, pyogenic and malarial infections, and miscellaneous medical conditions. These will not be given in full but the results referred to briefly, with occasional examples.

Technic. White counts were done in the usual way, and thin cover-glass preparations made, blood being obtained from the lobe of the ear. Hasting's stain was used, although any of the other modifications of the Romanowski would do as well, a clear nuclear differentiation being the chief desideratum. Differential counts were made on the basis of at least 500 cells, the divisions being: neutrophiles, eosinophiles, basophiles, large mononuclears and lymphocytes, transitionals being counted with the large mononuclears. Arneth counts were uniformly made on a basis of 200 neutrophiles, 100 being counted from each of two stained smears and the results averaged. The five chief classes of the original Arneth were adopted, the subdivisions being disregarded, while the index was that used by most workers in this country, the sum of the first, second and one-half the third classes. In counting it is most important that a standard be set and closely adhered to, so that the results may be comparable. Nuclei connected by anything more than the finest thread were classed as single. Nuclei plainly superimposed upon another were counted separately, and where doubt existed it was considered better to not tabulate the cell at all. As a matter of fact, with careful focusing in thin, well-stained preparations, the percentage of cells which cannot be classified is very small.

Normal. The normal as determined by Arneth originally was in round numbers:

I	II	III	IV	V
5	35	41	17	2

and with a few striking exceptions the majority of writers report formulae of about this type. In the present work the normal picture was obtained from 30 counts on 17 persons apparently in perfect health, both male and female, between the ages of 20 and 50. In most instances two estimations were made, from two to ten months apart. The results are as follows:

Averages.

Whites	Neutrophiles %	I	II	III	IV	V	Index
8,796	57.55	3.52	30.08	48.26	16.55	1.59	57.73

or in round numbers, an Arneth neutrophilic formula of:

I	II	III	IV	V	Index
4	30	48	16	2	58

Extremes.

Whites	Neutrophiles %	I	II	III	IV	V	Index
5,100-13,800	44.6-72.6	1-7	21.5-37	41.5-55	8-22	0-4	51.25-65.25

A striking point was the absence of any great degree of variation in these counts, a fact which is contrary to the observations of Williams,[28] who found wide extremes in 100 counts on 55 normal persons, although his average picture closely resembled the classical one.

Tuberculosis. Sixty counts were made in 30 cases, chiefly ambulatory attending the Alameda County Tuberculosis Clinic. The majority were pulmonary, although three glandular and one peritoneal are included. In the ordinary pulmonary cases counts were made not oftener than a month apart, as it was found that at shorter intervals the changes were not pronounced enough to be relied upon. This may be seen in the tables of Lewis,[11] who made counts as often as every three or four days.

Every active case showed an increase in the cells of the first two classes, or in other words, a shift to the left. The degree of this shift seems to depend upon the activity and severity of the infection rather than upon the actual amount of lung damage.

Two cured cases, showing evidences of at one time wide lung involvement, had pictures with no deviation from the normal. Of seven cases which showed marked shifting, that is with indices over 90, three have died, (the only deaths in the series) and three of the others have very bad prognoses, while the seventh is slowly improving, both clinically and in regard to the blood-picture as well, his last count (April 4) having an index of 80. Three other cases in which bad prognoses would be given clinically, although two were only seen but once, had indices of 86, 85 and 83.

The observations are of course too few to permit of any conclusions at present, but they would seem to bear out what has been found by others: that the neutrophilic examination of Arneth is of undoubted assistance in judging of prognosis, and that as a rule, the greater the shift to the left, the more serious is the case. Whether it is, as Lewis enthusiastically puts it, "a much more delicate and certain indication of the patient's condition than any other clinical sign" remains to be seen.

Typhoid. Sixty-three counts were made in 9 cases, mainly from the wards of the University of California Hospital, the counts being made in most instances once a week. Every case showed a very marked shift to the left, heaviest in the earlier weeks, persisting throughout the course, and gradually approaching normal as recovery ensued. If a relapse or exacerbation occurred the shift to the left immediately became more pronounced. These changes in typhoid are perhaps more distinctive than in other infections on account of their intensity. The tremendous increases in the cells of the first class, such as are regularly found here, are not seen in other conditions except under the gravest of circumstances.

The course of the disease apparently cannot be predicted from the initial counts. For example, in the mildest case of the series, the first count, taken at the beginning of the third week, showed:

Whites	Neutrophiles	I	II	III	IV	V	Index
10,700	60.4%	70	26	4	0	0	98

while in another, running a much more severe course, the initial count taken in the second week, showed:

Whites	Neutrophiles	I	II	III	IV	V	Index
9,300	77%	60	34	6	0	0	97

Whether or not the method will enable us to foretell the advent of a relapse can only be decided by a long series of observations. From the work done so far it does not seem to be of great practical value in typhoid, although of exceeding interest hematologically.

Table I shows the typical course of the neutrophiles in an ordinary case.

TABLE I.

U. C. H., No. 3844. Typhoid. Woman, age 40. Fairly severe course, no relapses, complicating mastitis in 5th week.

Date	Whites per cmm.	Neutro. %	Arneth classes— I	II	III	IV	V	Index	Remarks.
10/30/11	5,600	79.8	63.	43.5	3	0	0.5	98	Probably 3rd week.
11/10/11	6,200	60.4	45.5	41	13	0.5	0	93	Ordinary course.
11/20/11	7,500	56.4	40	47	13	0	0	93.5	Mastitis.
11/27/11	8,200	62.2	36	50.5	13	0.5	0	93	Temp. normal.
12/ 4/11	9,400	56.2	42.5	49	8.5	0	0	95.75	Temp. 2 days last week.
12/11/11	11,600	62.2	22.5	55	15.5	3	0	87.25	Temp. normal.
12/18/11	7,900	45.0	21	52	26	0.5	0.5	86	Temp. normal.
12/27/11	11,300	49.8	9.5	48.5	34.5	7	0.5	75.25	Up in chair.
1/ 5/12	11,300	54.0	5	38	47	8.5	1.5	66.5	Discharged.

Pyogenic Infections. In pyogenic infections, such as cellulitis, erysipelas and furunculosis, a study of 40 examinations in 7 cases showed that a shift to the left was constant, and proportionate to the severity of the infection. In every case the neutrophilic picture returned to normal on recovery. In two cases in which normal formulae were found previously, the sharp shift to the left following the onset of the infection with the gradual return to normal was most striking.

In ten other cases of miscellaneous infections shifting to the left was present in all. However, the majority of these were seen but once or twice and the blood consequently not studied systematically.

The shifting to the left of the neutrophiles in this group of infections is not otherwise characteristic, and in the way of prognosis does not seem to give any information additional to that which can be gained from a proper clinical study of the case.

Malaria. Twelve cases were observed, 8 tertian and 4 estivo-autumnal. A shift to the left was present in all, in agreement with Gothein,[10]

and contrary to the findings of Kagan,[30] who reported no change. The extent of the shift varied directly with the severity of the infection, the estivo-autumnals showing a greater degree than the tertians, although the most pronounced change of the series occurred in a very severe double tertian infection. The average picture, at the beginning of quinine treatment, of 8 tertian was:

I	II	III	IV	V	Index
22	44	28	5	1	80

and of 4 estivo-autumnal:

I	II	III	IV	V	Index
31	51	16	2	0	90

No practical value seems to be attached to Arneth examinations in malarial infections.

Miscellaneous conditions. In 33 cases of various medical conditions, not infections proper, 27 showed normal neutrophilic blood-pictures. Among these were included 7 non-tubercular pulmonary lesions, such as bronciectasis, chronic bronchitis, thickened pleura, etc.; 3 uncomplicated gastric ulcers with the patients in good condition; 3 cases of sarcomata of moderate degrees of malignancy; 1 case of liver and 1 case of cerebral-spinal syphilis; a mild case of Basedow; and several compensated heart lesions. Of the 6 showing a shifting to the left, the most marked was in a severe case of myxedema in which five examinations were made over a period of nine months. An extreme shifting to the left occurred, which has gradually diminished with the general improvement under thyroid, and for which no other cause could be found. In a severe case of myocardial insufficiency a moderate shift appeared, with a return to normal when compensation was again established. An advanced case of carcinoma of the uterus and bladder showed moderate shifting. In the other three cases no diagnosis was made, although the possibility of a tubercular infection was strong in all three.

It would appear from a survey of these cases that the neutrophilic alterations are more a feature of the infectious diseases than of the non-infectious, unless the latter are characterized by severe intoxications.

Conclusions. In so far as such a limited number of examinations will admit, conclusions may be offered as follows:

1. The nuclear formula of the neutrophiles, the so-called "neutrophilic blood-picture," in the normal, agrees closely and constantly with that found by Arneth and many other workers.

2. In tubercular, typhoid, pyogenic and malarial infections, a deviation from this normal is regularly found, the so-called "shift to the left," consisting of an increase in the cells with fewer nuclear units and a corresponding decrease in the cells with many.

3. The degree of this shift appears to be roughly proportionate to the severity of the infection, except in typhoid, where it is uniformly present to a marked extent, irrespective of the individual case.

4. In tuberculosis such changes in the neutrophiles seem to offer a distinct aid in prognosis, although the reliability of this needs further confirmation.

5. In typhoid, pyogenic, and malarial infections such changes do not at present appear to be of much practical value.

6. However, in the light of these constant and regular changes in the neutrophiles in disease, a blood examination should never be considered complete without an estimation of these cells according to the method of Arneth.

It gives me great pleasure to thank the members of the medical staff of the University of California Hospital for the privilege of using the material in their wards.

Discussion.

Dr. G. H. Evans, San Francisco: Any paper or contribution that throws any light on this very important question of Arneth's findings should be welcomed. There has been nothing in the work on tuberculosis which has brought forward more varied opinion than Arneth's work. I have become very pessimistic regarding the value of this work, because I have followed it out, particularly in cases of tuberculosis, and so far I must say I have found it without any practical value. There has been in favorable cases as frequently a shifting to the left as to the right and in one case which ran a rapidly fatal course Arneth's findings showed a decided shifting of the polynuclear scale to the right. I have a number of these cases where the work has been thoroughly tabulated and I hope to present them later but my findings have been very decidedly averse to those of Arneth and others.

Dr. F. M. Pottenger, Los Angeles: The method of Arneth has interested me greatly since its first publication and I have been very much surprised to note that it has not received more attention at the hands of the profession generally. In tuberculosis our work at the Pottenger sanitarium would indicate that the clinical prognosis and the results as indicated by Arneth's classification of the leukocytes tallies closely. The evolution of the leukocytes may be studied in the incubator. Dr. J. E. Pottenger has made numerous observations, preparing several specimens from the same blood and after keeping them in an incubator examining them at given periods of time, say ten minutes, fifteen minutes, thirty minutes and an hour; and by this method he has shown that there is a tendency for the leukocytes to change from the lower to the higher classes. The phagocytic ability of the leukocytes seems to increase with age. I was interested in hearing Dr. Evans say that he had found the Arneth method unreliable. It is true that the method requires confirmation and that a great deal more work should be done upon it. It is surprising that different workers seem to arrive at such different results but I think the difference is one of method. The slides should be prepared in the same manner and under the same conditions in all instances where comparative observations are to be made.

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A CASE OF ACROMEGALY WITH THROMBOSIS AND EMBOLISM.*

By W. B. COFFEY, M. D., and W. T. CUMMINS, M. D., San Francisco.

History: Mr. A. C. S., aged 39, a clerk, was admitted to the Southern Pacific Hospital on November 2, 1911. His father died of "spinal trouble" and his mother of gastric carcinoma. Two sisters are dead—one at childbirth. Three brothers and three sisters are living and well. Patient denied venereal infection, stating that his habits were good and that he had always enjoyed good health. However, at the age of twenty-five he felt that he was still growing—that his hands and feet were increasing in size. Shortly before admission a medical friend had diagnosed the condition as one of acromegaly based only upon anatomical changes, there having been no subjective signs of hypophyseal disease. The condition for which he entered the hospital was hemorrhoids and this had appeared one year before with blood-streaked stools associated with which there developed constant dull pains over the hips.

* Read before the California Academy of Medicine, April 22, 1912.

Examination: The patient appeared well nourished. The maxillary bones were large and gave the face a massive appearance, while the cranium appeared small in comparison. The hands and feet were unusually large. There were no ear symptoms; the nose and mouth were normal. A central scotoma was found in each eye. The thorax and abdomen were negative. No vasomotor disturbances were elicited. Rectal examination showed external and internal hemorrhoids with prolapse.

Urinalyses: 1. November 10, clear, yellow, Sp. gr. 1025. Acid. No albumin nor sugar. Microscopically negative. 2. November 15, cloudy, reddish brown. Sp. gr. 1030. Acid. Albumin + +. No sugar. Large number of casts of all types, including blood. Leukocytes, 30,000 cells.

On November 11 Dr. Coffey operated upon the hemorrhoidal condition by using the cautery, the time consumed being ten minutes. For several hours afterwards the patient showed maniacal excitement and was restrained with difficulty. Within thirty-six hours the temperature rose from 98.4° to 101.6° and this elevation was maintained until the following day (November 13). The maximum for the ensuing day was 100.4° and this was followed by a steady decline. Throughout the pyrexia the pulse rate did not rise above 90. General abdominal pain was the only complaint. Death occurred on November 15.

Autopsy Report: Well-developed adult. Face, hands and feet unusually large. Joints of fingers and toes were large, but there was no evidence elsewhere of osteophytes. Vertebral column was apparently normal. No thyroidal enlargement. Rigidity was marked in the arms; lividity, in dependent parts. There were no scars, eruption, nor bruises. Generalized jaundice was present, especially over trunk and lower limbs. The penis and scrotum were edematous and the latter on the right side showed early gangrene. No urethral discharge. The anus showed evidences of recent operation, but no suppurative changes.

The peritoneum was normal except for the pelvis, where there was marked congestion and in places hemorrhage. There was a moderate increase of clear, yellow fluid in the peritoneal sac. The transverse colon had a very long mesentery and reached slightly below the umbilicus. The stomach and other abdominal viscera were normal in position.

Spleen was twice its normal size (150 grams). Color was slatey gray and consistency firm. There was a small patch of chronic perisplenitis. Cut surface was granular, moist, dark brown and showed a moderate amount of blood. Capsule stripped with difficulty. The follicles were prominent and there was trabecular fibrosis. (Culture taken from spleen.) Liver was moderately increased in size but of normal shape. Color was dark brown; the consistency firm. Capsule stripped with difficulty. Cut surface was granular with markings of fibrosis and passive congestion. Gall bladder was apparently normal and ducts patulous. Stomach was moderately dilated; otherwise normal. Small intestine was normal, but the colon showed considerable dilation and congestion. Appendix was apparently normal. Pancreas showed some increase in consistency and moderate congestion. Left kidney was about double the normal size (150 grams) and was pale red and flabby. Capsule stripped very readily. Cut surface was smooth and moist with considerable cortical increase. Pyramids were prominent with congestion. Ureter was apparently normal. Adrenal was soft, yellow and cystic. Right kidney, ureter and adrenal were identical with left. Bladder contained small amount of cloudy urine. Wall was considerably thickened and showed moderate diverticulation. Right testicle and epididymis were markedly congested and softened, especially the latter. (Generative organs on left side not removed.) Sper-

matic plexus was markedly congested and in many places thrombi were found. (Cultures taken.)

Left pleural sac showed dense adhesions over upper lobe with almost complete obliteration of sac. Over lower lobe there were a few dense adhesions. No increase of fluid. Left lung was uniformly crepitant and normal, except for moderate congestion of lower lobe. Pulmonary vessels were apparently normal. Right pleural sac was normal and lung was similar to left. Pericardial sac was apparently normal. Heart showed a large milk plaque (2 cm. in diameter) over wall of right ventricle. Muscle appeared normal. Coronary sclerosis was moderate. Left auricular and ventricular endocardium, including the adjacent valves, showed some fibrotic thickening. Thoracic aorta, especially in arch, was markedly sclerotic. Thymus was negative. Right inguinal lymph node was about size of lima bean—soft and suppurating. Other superficial and deep nodes were normal.

Brain: Weight 1340 grams. Convolutions were well formed. Meningeal vessels were markedly congested and serous surfaces cloudy and somewhat thickened, particularly over the parietal lobes. Basilar vessels appeared somewhat tortuous and walls thickened. Cerebral vessels were slightly congested. Consistency of cerebrum was normal. Ventricles normal. There was no evidence of hemorrhage nor embolism. Pineal gland, cerebellum, pons and medulla were apparently normal. Hypophysis measured 2.5x2.5x1.25 cm. Weight 4.02 grams. It was about the size of a small horse-chestnut. Color was pale yellow except for a congested vessel on the surface. Consistency was of mush-like, coarsely granular character and upon removal of brain it was found impossible to remove entire hypophysis, a small quantity of thick, cream-like material remaining in sella turcica. These bony parts were of increased size and depth. On account of the consistency of the tissues no differentiation could be made out between the anterior and posterior lobes of the organ. (Spinal cord and thyroid gland not removed.)

Histological Examination: Lungs—There was moderate congestion and many of the smaller blood vessels were filled with emboli composed chiefly of leukocytes. Few alveoli contained corpora amylacea. Heart—Some fibres showed moderate hypertrophy, while others segmentation. Liver—Peritoneal mesothelial cells were large and cuboidal, while the underlying tissues were moderately fibrotic and infiltrated with round cells. Moderate interlobular fibrosis, as well as cloudy swelling and passive congestion, were evident. Pancreas—Moderate fibrosis and congestion were present. Few of the islands of Langerhans were very large; otherwise normal. Kidneys—There was moderate capsular and cortical fibrosis, as well as cloudy swelling. Adrenals—Some cortical cells showed considerable vacuolation. Throughout the sections the three cortical zones were ill-defined. The medulla appeared hypertrophied, the blood vessels engorged and numerous large masses of round cells were seen. Outside the capsules there were several large and small areas of hemorrhage. Cerebrum—The pia-arachnoid showed nodular fibrous thickening to a well-marked degree. The meningeal and cerebral vessels were moderately congested. The nerve cells and glia were normal. (Sections from the frontal, temporo-sphenoidal and parietal lobes.) Cerebellum—Moderate congestion of the meningeal vessels was noted. Pons and medulla normal. Basilar Artery—The lumen was almost wholly occluded by unilateral fibro-degenerative changes in the intima and media. Hypophysis—The sections showed only the anterior, glandular portion and the pars intermedia. Proliferative glandular changes were evident and the blood spaces showed engorgement. The intermediary portion was densely packed with cells, some of which appeared of neurogliar type. Here and there multinucleated cells were seen, while the chromaffin cells were small in number. A few small masses of colloid were evident. (Tissue fixatives formalin and Müller-formol.)

Clinical Diagnosis: Aeromegaly; rectal prolapse with external and internal hemorrhoids.

Pathological Diagnosis: Chronic pleuritis; hypostatic congestion of lungs; corpora amylacea and embolism; chronic localized pericarditis; chronic mural endocarditis, chronic aortic and mitral valvulitis, coronary sclerosis, hypertrophy and segmentation; aortic sclerosis; hydroperitoneum; chronic interstitial splenitis and perisplenitis; chronic perihepatitis, interstitial hepatitis, cloudy swelling and passive congestion; chronic interstitial pancreatitis; acute parenchymatous nephritis with early interstitial changes; hemorrhage in the adrenals; chronic cystitis; congestion and thrombosis of spermatic plexus; congestion of right testicle and epididymis; edema of scrotum and penis; suppurative inguinal adenitis; chronic leptomeningitis; sclerosis of basilar artery (endarteritis nodosa); adenoma of hypophysis.

Bacteriological Diagnosis: Cultures sterile.

Remarks: The complicating hemorrhoidal conditions with operation claims attention. Upon recovery of consciousness after the short operation the patient manifested great excitement and restraint was necessary. The temperature was disproportionately high as compared with the pulse rate. Four days after operation death occurred apparently from acute nephritis.

The patient presented the classical objective signs of hypophyseal disease without the subjective cranial symptoms which are frequently associated with this disorder. The hypophysis was wholly contained within the sella turcica and there was obviously no compression of the cranial nerves, thus explaining doubtless the absence of the common eye and ear symptoms. Hemorrhages in the adrenals were an interesting associated condition. The chronic leptomeningitis may have been syphilitic in character and this was suggested by the advanced arteriosclerosis without evidences of gout nor history of lead in a patient thirty-nine years of age. Unfortunately no serologic examination was made. Thrombosis and embolism are occasionally seen following hemorrhoidal operations and whether or not the acromegalic condition favored the spermatic thrombosis and pulmonary embolism is not clear, though it has been shown by metabolic investigations that in hypophyseal disease there is an increase in calcium content of the blood (Franchini). Investigations of experimental character have been carried out by [1] Fellner, [2] Schickele, [3] Frankl, [4] Hugenin, [5] Klein, [6] Freidberg, [7] Dold, [8] von Mirto, [9] Patta-Decio, and [10] von Franqué, to determine the action by intravenous inoculation of tissue extracts (uterus, ovary, corpora lutea, placenta, myoma, carcinoma, sarcoma, chorioepithelioma, etc.) in the production of thrombosis; though the results are not uniform. It has been shown in some cases that operations upon organs and certain tumors have been followed by thrombosis (by some ascribed to liberation of thrombokinase), but the possibility of infection was apparently not eliminated in all of these. Spontaneous necrosis of tumors and other tissues has likewise induced thrombosis.

Finally, in the light of investigation upon the alleged thrombokinetic action of organic tissues, one should consider the possibility of thrombosis in operations upon highly vascular and varicosed tissues, especially when coincidently there is disease of an organ which may bring about an increase in calcium content of the blood.

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THE PRESENT AND FUTURE OF THE EYE AND EAR SECTION OF OUR STATE MEDICAL SOCIETY.

By WILLIAM H. DUDLEY, M. D., Chairman, Los Angeles.

The question of forming sections out of the large medical societies, since 1879, when the ophthalmic surgeons drew out of the American Medical Association, and held separate meetings, has found popular acceptance in the minds of physicians trying to do the best work along special lines; and as it was the ophthalmic surgeons who first united to form a separate section in the American Medical Association, so it has been since in the state societies, or rather, the eye surgeons joined by the ear, nose and throat surgeons, who have been the first, as a rule, to avail themselves of the privilege of working by themselves, not to the exclusion of the general, or other special practitioners; but by combining their efforts, they have been able to achieve far better results than could have possibly been accomplished in the older method of all working together in the general section. It is possible, however, that this method may not be without its disadvantages, for while it does certainly deepen the channel in which we work, it may also contract the limits of our scientific usefulness.

We must, however, all admit the depth to which all special lines have developed within the past few years, that none of us is longer able to grasp all that is being taught at the present time in medical science, hence, if we would do the best work, it must be along special lines.

Since the state societies began to form special sections, no less than ten have joined in this form of division, and one, viz., Arkansas, I am informed is arranged somewhat after the American Medical Association, except that instead of holding the meetings simultaneously, the different sections hold their meetings in order of sequence, having no *general* scientific meetings.

Recognizing the advantage of this form of segregation, the eye, ear, nose and throat surgeons, members of the California State Medical Society held a meeting at the time of the state meeting two years ago, elected a chairman and secretary to get up a scientific program, and make arrangements for a meeting the following year, and we all know that a successful meeting was held last year at Santa Barbara. Again a chairman, vice-chairman and secretary were elected to arrange for a second meeting to be held this year, but no other business was transacted so far as I am aware. That the secretary, to whom the credit of the success of this meeting chiefly belongs, has been awake since the last meeting of the section our present program testifies in eloquent terms.

Soon after being elected chairman last year, it was discovered through correspondence with the secretary of the state society, that in reality, this section had no existence, which statement, if true, convinced the chairman that an effort should be put forth to bring in into existence. If the section were simply an embrio, it must be near the end of gestation and arrangements should be made for a delivery, so to speak. Inasmuch as section viii of the constitution of the state society provides for the formation of sections, it was felt that a resolution should be presented to the house of delegates at this meeting, calling for the recognition of this section, and defining its rights and privileges. Permit me to state that such a resolution has been prepared, and if it meets with the approval of the members at this meeting, it will be presented, and its adoption be asked.

The chairman will also be pleased at the proper time, to entertain a motion for the appointment of a committee for the purpose of drawing up a constitution and by-laws, for the proper government of this section, the same to be presented at a later meeting, for consideration and adoption.

Now it appears to the chairman that we have as members of the state society, and consequently, members of this section, many men of eminent scientific attainments, men to whom we may look for achievements in the line of scientific investigation, which if properly presented at our state meetings will place this state society second to none in this country in results obtained. We have clinical advantages here peculiarly well adapted to investigation along certain lines which no other state can claim. Physicians from all over the East are sending patients to us almost without number, with complications in our line of work, which if grasped, give us opportunities unsurpassed, which we should investigate, recognize, and in this section work out the results.

These patients not only come to us from the East, but many also from the West, from the islands of the sea, from the North and from the South, in native and alien, and to successfully comprehend the conditions presented, demands the best that is in us, pathologic, diagnostic, surgical and therapeutic, and the results of our work, properly presented at our annual meetings, will place the eye and ear section of the Medical Society of the State of California in an enviable position among the similar sections of the societies of our country.

OCULAR DISTURBANCES CAUSED BY THE CINEMATOGRAPH.*

By MORTON E. HART, M. D., San Francisco.

Ocular disturbances due to the cinematograph have, up to the present time, received practically no mention in medical literature. It seems strange that this should be the case, for no doubt it has

* Knowledge and Scientific News (London).

fallen to the lot of almost every oculist, particularly in the large cities to have seen and treated many patients suffering from this new disease. And there are very good reasons that there should be ocular disturbances from this new plaything of the people.

The cinematograph has for its principle the persistency of luminous impressions on the retina. The impression made by light on the retina does not cease the instant the light is removed, but persists about one-eighth of a second. If the luminous impressions are separated by a less interval, they appear continuous. In the cinematograph projection, the pictures are thrown upon the screen at the rate of sixteen a second and though this apparently shows continuous motion, such is not the case. An infinitesmal period of motion is lost between each successive picture in the short period the lens is closed to admit of the successive section of film being jerked into place behind the lens and although the eye does not realize the motion that is lost, yet it still has an impression of lack of continuity, colloquially described as "flicker," attributed to cutting in and out of the shutter, but which is in reality, nothing more than the sharp line of demarcation between each period of movement, as represented by its individual instantaneous picture.*

The average cinematograph performance lasts from three-quarters of an hour to an hour and is it a wonder that we get ocular disturbances after subjecting such a sensitive membrane as the retina to such fatigue. These successive excitations exhaust the sensibility and disturb the physiological function of the retina.

The ocular disturbances, classified under the generic term of "cinematopthalmia," are really disturbances of vision due to traumatism, and are matters of degree. The process is the same in all of the conditions. There are those cases which are merely transient in their disturbance. When the picture is first thrown on the screen, the individual is inconvenienced by photophobia and a few tears. He closes his eyes and these symptoms soon pass away after a few seconds of repose, and the retina accustoms itself to the new condition of affairs. A further degree is of longer duration; the retina cannot adopt itself to the fatigue imposed on it and each time the individual opens his eyes, the symptoms reappear. It is impossible to continue the spectacle. After leaving the theatre, the disturbance still persists and in addition to the mild photophobia and lacrymation there ensues a slight reddening of the conjunctiva. A few hours, or at least a night's rest, will return the eyes to their normal tone.

In the third degree of disturbance, the symptoms are more severe and the return to the normal somewhat prolonged. Here the photophobia, lacrymation and conjunctivitis persist for several days and in addition, we have a smarting and itching of the eyes.

In the very severe cases, besides the inflammation of the conjunctiva with its attendant symptoms of lacrymation and photophobia, we have very definite asthenopic symptoms, both accommodative and retinal—the former due to the ciliary strain and the latter due to a hyperesthesia of the retina. The distant vision remains normal. Under examination these patients are found to have no error of refraction or lesion of the fundus. A case in question may here be cited:

E. R., female, age 16, was brought to me with the following complaint: Eyes burned and itched and the lids were red, particularly at night. Reading was impossible on account of blurring of the page. No headaches. This condition would clear up after a night's rest, to reappear again at frequent intervals.

On examination a slight reddening of the conjunctiva was found and under a mydriatic an error of one degree of hyperopia, which was corrected. The near point was normal, showing no error of accommodation. Of course this was tested before using the mydriatic. No lesion of the fundus was found. Unfortunately the patient could not be seen during an attack.

After wearing the glasses for several weeks, the patient reported, stating that the condition had not improved. She was then closely questioned and it was found that it was her habit to attend a moving picture show at least four times a week after school and unbeknown to her mother. She was forbidden this amusement and the condition entirely cleared up.

Fortunately these ocular disturbances are not serious and will clear up under simple collyria and rest.

The question will naturally arise, how can we do away with the cause of the trouble?

First: The films must be perfect and free from all imperfections. We have all noticed the scratches on the pictures, particularly at the end of the reels, due to careless handling. When we realize that the average picture thrown on the screen is about 97,000 times larger than the original size of the individual film, we can appreciate that even the smallest blemish on the films will be tremendously magnified on the curtain and will have a correspondingly bad effect on the eyes.

Second: The illumination must be steady, must not vary and must neither be too bright nor too dim, for this causes fatigue.

Third: The speed with which the films are turned must be regular. Any irregularity will have a tendency to cause ocular fatigue.

Fourth: The position of the spectator is very important and should receive proper regulation at the hands of the authorities. First of all, there should be no seats placed at the sides of the auditorium. Every seat should be in direct line with the curtain. This will do away with the distortion of the picture. Anyone who has had the experience of sitting on the side, can appreciate the intense strain and fatigue placed on the eyes.

No seat should be placed nearer than twenty feet from the screen and further if practicable, depending upon the size of the picture on the curtain. This will do away with any accommodative effort on the part of the spectator and thus will reduce the fatigue to a minimum. The nearer the screen the greater the fatigue so the seats at the rear of the auditorium are the best.

The effect of the cinematograph on the eyes finally depends upon the individual himself. Some persons can attend daily without evil results while others cannot stay through a single picture without ocular fatigue. This depends to a great extent upon the nervous predisposition and those with this idiosyncrasy should remain away from the cinematograph.

APPENDICITIS: THEN AND NOW.

By JNO. C. KING, M. D., Banning.

I report the following case merely as an illustration of the change that has occurred during the past thirty years in the attitude of the profession toward appendicitis. In the summer of 1880 I attended a case of what we then called peri-typhilitis. An abscess formed. The patient became very ill. I requested a consultation with a view to operation. The consultant, an able man of large experience, decided that operation was unjustifiable and advised ointment of iodide of potassium, well rubbed in. Forty-eight hours later, feeling that operation was imperative, I sent to Cincinnati for a well-known surgeon, professor of surgery in a college there. Upon examination he declared the man would die under any circumstances; that he would not risk his reputation by operating; that aspiration of the pus was the only thing good surgery demanded. (He kindly offered to send me an aspirator.) The patient was becoming septic; so, after another forty-eight hours, I insisted upon opening him. He gave consent. I asked a number of physicians to give ether, but, although several of them had anesthetized patients for me for other purposes, none would give ether in this instance, deeming it improper to attempt operation. I finally told the man to get another doctor; that I felt he would die unless the pus could be removed; that none of my friends would assist me in doing what I thought needful. He replied that I could go ahead without an anesthetic; that he could stand it if I could. The patient's brother had threatened to kill any one who would attempt to cut him; so, while his wife stood guard at the door, I cautiously opened the abscess. It is difficult to realize that what we now deem so simple and necessary a procedure should then have been considered so absolutely wrong. The tension in the abscess was such that the pus spurted up not less than an inch when the knife reached it. I evacuated all I could and dressed the wound. Before my return the next day, one of my colleagues, a leading man, visited the patient unbidden, removed the dressings and examined the wound, notwithstanding the protest of the wife. He declared the man would die; that I had been guilty of malpractice; that he would be glad to be called upon as a witness in the prosecution that he knew must follow; that he had taken the liberty of examining the patient before death with that end in view. A year ago Dr. T. B. Wright, of Pasadena, brought to me a message from the patient, Col. M. V. B. L., of Circleville, Ohio, to the effect that he was still living. This story is amusing and almost incredible now, but thirty-two years ago it meant a real battle for a very young and fairly ignorant surgeon.

THE CALIFORNIA STATE TUBERCULOSIS COMMISSION.*

By GEORGE H. KRESS, M. D., Los Angeles, Chairman of the Commission.

The particular reason for giving the California State Tuberculosis Commission a place on this morning's program was to officially and briefly call to the attention of the members of the State Medical Society, somewhat of the nature of this newly formed commission and of some of the things it hoped to do.

As you all know, the last legislature appropriated five thousand dollars, to be spent by a special tuberculosis commission to be appointed by the California State Board of Health, this commission to use this money to "ascertain the effects of localities, employments, conditions and circumstances on the health of those developing tuberculosis, and to determine the best means of eradication thereof."

After a good deal of preliminary correspondence by Dr. Wm. F. Snow, the State Health Board Secretary, with all the anti-tuberculosis societies and others known to be interested in the prevention and cure of tuberculosis in California, the State Board of Health decided to appoint a State Tuberculosis Commission consisting of an executive committee of five and an advisory board of fifty.

The State Board of Health appointed on the executive board of five the following persons:

Dr. C. C. Browning of Los Angeles, Miss Katherine Felton of San Francisco, Dr. R. G. Broderick of San Francisco, Mr. A. Bonnheim of Sacramento, Dr. George H. Kress of Los Angeles, chairman.

The executive board held its first meeting at Sacramento last fall and it was then decided, in joint session with the State Board of Health, that the local headquarters for the work of investigation should be the office of the State Board of Health at Sacramento, where access could be had to all the vital statistics of the state, and where the other trained assistants of the State Health Board as well as the special employees of the Tuberculosis Commission could be under the constant supervision of our efficient State Health Board Secretary, Dr. Wm. F. Snow.

It was also decided that the Advisory Board of fifty prominent physicians and laymen interested in the prevention of tuberculosis, should be divided into ten sub-committees, each of which sub-committees was to have as its chairman one of the members of the Executive Committee, the idea here being to centralize the responsibility of the actual work of the members of the Executive Board, so that at the quarterly meetings of that Executive Board it might be possible to have a first hand knowledge of the work in progress.

The divisions of these ten special lines of investigation and the personnel of the complete commission, are as follows:

1. Institutional Activities: Administration. Dr. Browning, chairman.

2. Institutional Activities: Construction. Dr. Browning, chairman. The construction and administration of sanatoria, hospitals, dispensaries, camps, etc., are included in the work of these committees as well as home treatment and general prophylaxis.

3. School Construction and Health Administration of Schools. Miss Felton, chairman.

* Report to the annual meeting of the Medical Society of the State of California at Del Monte, Cal., on April 17, 1912.

4. Housing Conditions. Miss Felton, chairman. The work of these committees refers to open air and out-door schools, medical inspection of school children; also, general housing conditions—in homes, tenements, factories, hotels and lodging houses.

5. Sociologic and Economic Conditions. Dr. Kress, chairman.

6. Legal Procedure. Dr. Kress, chairman. Special attention will be given by these committees to statistical work, showing the relation of tuberculosis to daily life, and economic and sociologic conditions. The gathering of legal information and the advising of the Executive Board regarding proposed legislation, based upon the experience of other commonwealths and upon present conditions in this State, will be a duty of these committees.

7. Scientific Problems. Dr. Brodrick, chairman.

8. Educational Measures. Dr. Brodrick, chairman. The study of scientific data relative to human and bovine tuberculosis, their prophylaxis, etiology and methods of transmission; and the education of the public by means of literature, press reports, sermons, exhibitions, demonstrations and the like, will be undertaken by these committees.

9. Industrial and Commercial Problems. Mr. Bonnheim, chairman.

10. Registration and Disinfection. Mr. Bonnheim, chairman. These committees will take up an occupational investigation of tuberculosis and will study the problems dealing with transportation, fumigation, reporting of cases and deaths, proper disinfection, etc.

The personnel of the ten committees is as follows:

1. Institutional Activities: Administration. Dr. Chas. C. Browning, chairman, Dr. W. Jarvis Barlow, Dr. Robert A. Peers, Dr. Frederick W. Hatch, Miss Margaret B. Curry.

2. Institutional Activities: Construction. Dr. Browning, chairman, Dr. Edward von Adelung, Dr. Gayle G. Moseley, Dr. Chas. H. Whitman, Mrs. Samuel Brust, Mr. John E. Hoyle.

3. Construction and Health Administration of Schools. Miss Katherine Felton, chairman, Dr. N. K. Foster, Dr. Geo. F. Reinhardt, Prof. J. H. Francis, Mrs. M. W. Kincaid, Dr. Richard G. Boone.

4. Housing Conditions. Miss Katherine Felton, chairman, Miss Alice Griffith, Rev. Dana Bartlett, Mr. Walter Macarthur, Dr. Philip King Brown, Mr. J. J. Bakewell, Jr.

5. Sociologic and Economic Conditions. Dr. George H. Kress, chairman, Mr. A. B. Nye, Mr. Frederick W. Dohrmann, Dr. John C. King, Mr. Thomas F. Griffen, Mrs. Robert O. Moody.

6. Legal Procedure. Dr. George H. Kress, chairman, Mr. Chas. A. Bliss, Dr. John L. Avey, Mr. A. E. Boynton, Mr. J. E. Gardner, Mr. W. A. Sutherland.

7. Scientific Problems. Dr. R. G. Brodrick, chairman, Dr. Frederick P. Gay, Dr. Wm. Ophuls, Dr. F. M. Pottenger, Dr. C. M. Haring, Dr. Geo. H. Hart.

8. Educational Measures. Dr. R. G. Brodrick, chairman, Mr. Edward Hyatt, Rev. D. O. Crowley, Rev. Chas. F. Aked, Rabbi Martin A. Meyer, Mr. Frederick S. Withington.

9. Industrial and Commercial Problems. Mr. A. Bonnheim, chairman. Dr. Geo. C. Pardee, Dr. Geo. E. Tucker, Dr. Minerva Goodman, Mr. John I. Nolan, Mr. Chas. H. Bentley.

10. Registration and Disinfection. Mr. A. Bonnheim, chairman. Dr. Wm. C. Voorsanger, Mr. C. B. Boothe, Dr. H. N. Morrison, Mr. A. Caminetti, Mr. L. D. Bohnett.

Special Consultants and Auxiliary Workers.

In addition to these administrative boards constituting the officially appointed Commission, many persons have undertaken important special work in connection with the investigation. A large number of women's clubs, medical societies, labor associations and other organizations have appointed representatives to obtain accurate data on social and economic phases of the problem in various districts of California. A smaller number of experts in welfare organization work is volunteering a considerable amount of personal time for the study of special matters under consideration by the several committees.

Thus far two meetings of the Executive Board have been held at Sacramento, and this Board will be in session with the State Board of Health at this Del Monte meeting of the State Medical Society, and you are, each and all of you, cordially invited to present to the Commission or its members, any suggestions as to fields of investigation or methods of conducting the same which you may think desirable or needed.

During the last six months or so the statisticians of the State Tuberculosis Commission have been analyzing the tuberculosis mortality cards on file in the State Health Office at Sacramento, and already some most interesting facts have been brought out and charts and tables constructed.

We urge all of you who wish to know more of this work and who have not yet received a copy of the same, to write to the California State Board of Health for the special December California Tuberculosis Commission number of the Bulletin of the California State Board of Health, in which is presented by Dr. Snow and others an outline of some of the work already accomplished.

Time forbids at this meeting the discussion in detail of some of these interesting figures and investigations, but all who are interested will find an excellent presentation of some of them by Dr. Snow on pages 143 to 146 of the December, 1911, State Health Board Bulletin already referred to.

One thought which we wish to especially emphasize at this time is that every one of you is looked upon as an advisory and volunteer worker of the State Tuberculosis Commission, and we most earnestly urge each and all of you to cooperate to the fullest possible extent, in the effort now being made to secure mortality and morbidity

statistics in relation to tuberculosis and to elaborate more fully the sociologic and economic significance of these tuberculosis figures.

Once this information is at hand, we will have the premises upon which we can base our conclusions and our recommendations to the next legislature concerning the responsibilities of the legislature in the prevention and cure of tuberculosis as it exists in California.

At this time the Tuberculosis Commission has no settled conclusions as to what shall or shall not be recommended to the legislature, for until now we have been engaged in gathering the information from which intelligent recommendations must necessarily be made. Many of the facts needed are still lacking and for these we must depend largely upon the members of the medical profession. We beg of each of you, therefore, that you promptly seek and give to the Commission the information it needs, when you receive postcards and other requests from time to time in regard to present or former patients. If you each will do this, it will be possible to creditably fulfil the function for which the Commission was appointed. If you fail us in this, then the Commission and the State Health Board must likewise fail in its efforts in just that same proportion.

In conclusion, we again repeat that we urge each and all of you to communicate with the Commission or its members, either in writing or verbally, as regards any work you think should be undertaken or as to scope of work already started. In all this the State Health Board and the State Tuberculosis Commission feel they are your servants, and it is their desire to bring in a report that will be creditable to the medical profession and which will pave the way, in some measure, for a solution of this great tuberculosis problem of California, which grows more menacing as each year goes by.

SOCIETY REPORTS

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of June, 1912, the following meetings were held by the San Francisco County Medical Society:

Section of Medicine, June 4, 1912.

1. Feeding in First Month of Life. Dr. Adelaide Brown.
2. The Principles Underlying the Feeding of Infants. Dr. Langley Porter.
3. Feeding in Later Infancy. Dr. H. H. Yerington. (To be published in Calif. State Journal.)

Discussed by Drs. Sanford Blum, G. D. Culver, A. S. Keenan, Adelaide Brown, Langley Porter and H. H. Yerington.

Regular Meeting, June 11, 1912.

1. The Therapeutic Value of Injections of Deep Sea Water. Dr. F. C. Keck.

A summary of this paper having evidently been furnished the San Francisco Examiner by interested parties previous to the meeting, the Publication Committee of this Journal would refer its readers to the San Francisco Examiner of June 12, 1912.

Section on Surgery, June 18, 1912.

1. Presentation of Case of Skin Grafting: Transplanting of Flaps. Dr. George Rothganger.
2. A Recent Case of Lipectomy. Illustrated by lantern slides. Dr. H. Edward Castle. (To be published in Calif. State Journal.)
3. Prostatectomy in Man of 83 Years. Dr. H. B. A. Kugeler. (To be published in Calif. State Journal.)

Eye, Ear, Nose and Throat Section, June 25, 1912.

1. Exhibition of Case of Oxycephalus. (X-ray plates.)
2. Report of Case of Tuberculosis of Mastoid in Baby of 2 months and 10 days. Illustrated by microscopic slides.
3. Report of Case of Fistula of Temporal Bone. Dr. H. B. Graham.
4. Report of Case of Carcinoma and Sarcoma of Larynx.
5. Exhibition of Case of Laryngeal Sarcoma (?) Dr. A. S. Green.
6. Review of Some Recent Italian Literature. Dr. V. F. Lucchetti.
7. A New Supplementary Method of Localizing Foreign Bodies in the Eye, with Review of Older Methods. Ferdinand Freytag, Ph. D. (To be published in Calif. State Journal.)

SOCIETY OF THE SAN FRANCISCO POLYCLINIC.

Wednesday, June 5, 1912. 8:30 p. m.

1. Report of Several Cases of Gasserectomy Accompanied by Demonstrations. Dr. J. Henry Barbat. Discussed by Drs. H. E. Castle and C. G. Levison.
2. Four Years of Clinical Study in Medical Tuberculosis. Dr. Philip King Brown.
3. The Palliative Treatment of Terminal Laryngeal Tuberculosis. Dr. Henry Horn. Presentation of Case. Discussed by Drs. H. S. Moore and J. J. Kingwell.
4. Spinal Curvature. Dr. J. T. Watkins. Discussed by Dr. G. J. McChesney.

Refreshments were served after the meeting.

BUTTE COUNTY.

The Butte County Medical Society held its meeting for June in Chico and had an unusually large attendance of guests from other counties. It was decided to raise funds by assessment for the purpose of prosecuting illegal practitioners.

The regular meeting of Butte County Medical Society was held Tuesday evening, June 11, at the dining-room of the Park Hotel. A "Dutch" supper was served after the meeting. The Society was represented by members from different parts of the county, two members coming from Orland, Glenn county. Those present were: Drs. J. H. M. Karsner and T. B. Rearden from Oroville; Dr. L. Q. Thompson of Gridley, Dr. S. Iglick and Dr. Samuel Goldman of Orland. Dr. Middleton Stansbury of Hamilton City and Drs. C. L. Browning, O. Stansbury, P. L. Hamilton, and Ella F. Gatchell of Chico. After the banquet, the time was devoted to discussion on different matters of business. Voted to add $1.00 to present assessment to be used in prosecuting illegal practitioners. The matter of contract practice was discussed by the members. Voted to lay on table.

ELLA F. GATCHELL, Secretary.

NORTHERN DISTRICT SOCIETY.

The Northern District Medical Society, Dr. Peers, President, met at Colfax, June 11th, and had a very well attended meeting. A number of excellent papers were read and it is probable that some of them will appear later in the Journal.

ORANGE COUNTY.

The annual meeting of the Orange County Medical Society was held at the Anaheim Sanitarium in May. Dr. Ida B. Parker was elected President, Dr. John Wehrly, Secretary, and Dr. H. S. Gordon Treasurer. The meeting was largely in the nature of a social one and the banquet and speeches were enjoyed by the large number of members present.

POMONA VALLEY.

The charter members of the Pomona Valley Medical Society were given a delightful dinner at the bell club house, Pomona, on June 25th. The attendance was large and the program excellent.

RIVERSIDE COUNTY.

The annual meeting of the Riverside County Medical Society was held at the Victoria Club on June 10th, and about 50 members and guests attended.

SAN BERNARDINO COUNTY.

The San Bernardino and Riverside County Medical Societies were the guests of the Patton state hospital in May. The meeting was largely in the nature of a clinical one and was appreciated by all who attended. The meeting for July was devoted to public health matters and particularly to the question of clean dairies and certified milk. The society adopted resolutions supporting the health board and appealing to the council for more earnest support.

SONOMA COUNTY.

The June meeting of the Sonoma County Medical Society was held with Dr. I. A. Wheeler at Healdsburg. Dr. Wheeler read a very interesting paper, after which refreshments were served.

TULARE COUNTY.

The Tulare County Medical Society met in Tulare for the May meeting, in Lindsay for the June meeting and in Porterville for the July meeting. All of these meetings were well attended and subjects of general interest were discussed.

YOLO COUNTY.

The June meeting of the Yolo County Medical Society was held at the residence of Dr. F. R. Fairchild, a large attendance being present. Dr. Fairchild read a paper on the Open Treatment of Fractures with the Lane Splint; it was extensively discussed. After the business meeting, refreshments were served.

SOCIETY OF ANESTHETISTS.

On June 6th, at Atlantic City, during the meeting of the American Medical Association, and following a symposium on anesthesia, the National Society of Anesthetists was organized. Prof. Yandel Henderson of Yale, Chairman of the Commission on Anesthesia of the A. M. A., occupying the chair, those assembled for the symposium acting as a committee of the whole, proceeded to organization and elected the following officers for the year 1912-1913:

President, James T. Gwathmey of New York.

Vice-Presidents—Charles K. Teter of Cleveland, F. H. McMeechan of Cincinnati, Yandel Henderson of New Haven.

Secretary, William C. Woolsey, 88 Lafayette avenue, Brooklyn.

Treasurer, Harold A. Sanders of Brooklyn.

The constitution and by-laws were ordered to be drawn by the executive committee and submitted to the society at its next meeting for adoption; all names submitted for membership, if qualified in the estimation of the executive committee, shall be considered as charter members if presented within a period of sixty days and accompanied by the levied due of three dollars.

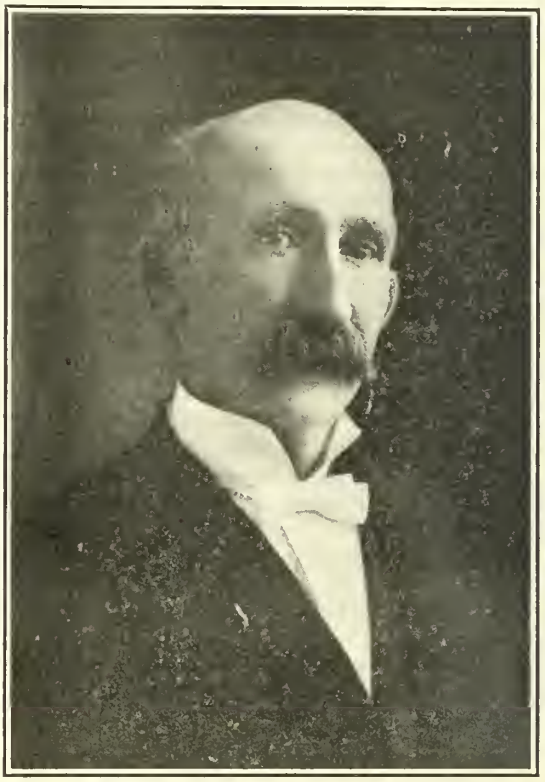
The National Society of Anesthetists in this notice, calls all those who are actively interested in this work to join its ranks and assist in developing the subject of anesthesia to greater perfection and more uniform safety.

WILLIAM C. WOOLSEY, Secretary.

WILLIAM L. MAUPIN, M. D.

Dr. Wm. L. Maupin was born in Columbia, Mo., April 17th, 1839. He was educated at William Jewel College in Liberty, Mo., and afterwards took up the study of medicine in Columbia, Mo.

At the first call of Governor Jackson for troops to enlist in defense of state rights, in 1861, he enlisted under Colonel Singleton and was shortly after transferred to General Price's command. After a few months of warfare, he was captured and taken prisoner. He was very ill while in prison, and for many weeks he was thought to be near death. When he was released from prison he returned to Columbia, and as soon as he recovered his health he resumed the study of medicine and



attended the course of lectures at the St. Louis Medical College. He graduated from Jefferson College in Philadelphia in the year 1867. He then returned to Columbia, Mo., where he practiced medicine and surgery for twenty-three years. He was a Democrat in his political views; a Baptist in his religious views, and an enthusiastic Mason. He was a cheerful promoter of every good thing that looked to the highest interest of humanity.

On account of failing health he moved to California in 1887 and settled in Fresno, where he soon became interested in everything that concerned the general good of the new western city. He died the 19th of June, 1911, at his home in Fresno. A long and useful life and a peaceful end.

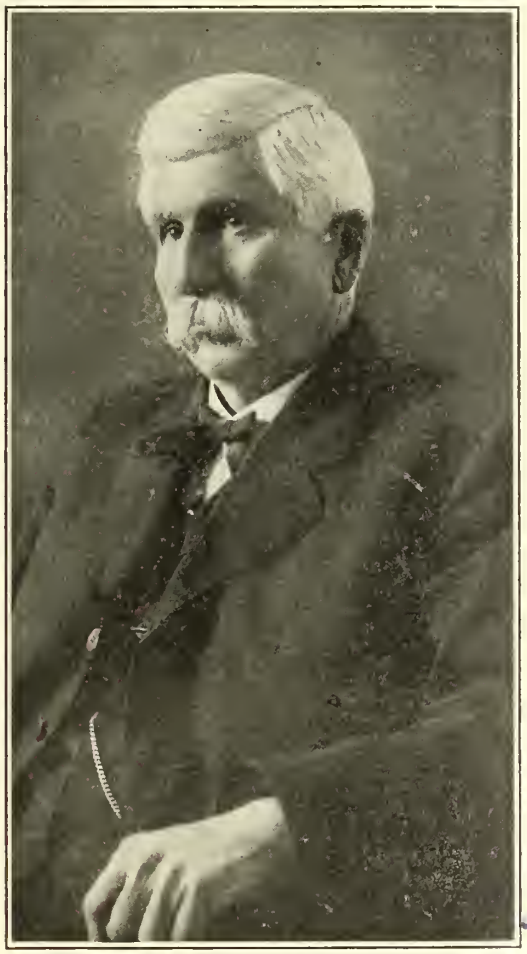
CHESTER ROWELL, M. D.

Dr. Chester Rowell was born in 1844 and died May 23rd, 1912. He graduated in medicine from the University of the Pacific in 1870 and settled in Fresno, where he practiced medicine up to the time of his death, at which time he was Mayor of Fresno. No more fitting or descriptive obituary could be written than that published in the Fresno Republican by J. W. Short, which, in part, here follows:

Our friend is dead. These words will be on the lips and in the hearts of many, many people in Fresno to-day. They are words often spoken of

one who has espoused a cause or rendered service to a people, but their meaning to-day will be different from the ordinary meaning. In the words we speak to-day is the feeling that comes to us when a hand that was always ready when we needed it is no longer within our grasp; when the busy hand that was extended to us all lies pulseless and inert. Whether we endure long or for a little time there are not many hands like it that we may clasp. It was the hand that gave and did not take. Not many hands are fashioned like that.

Thirty-one years ago this month I came to Fresno to set type for the Republican in the back room of a building where Goodman's store now stands. In the front room on the same floor of the old building was Doctor Rowell's office. It



was fitting that he should be there. Through its various changes and vicissitudes he was never far away from the Republican. It was a child of his adoption and nurture and always he rejoiced in its virtues and regretted its failings. I think in later years he had no deeper joy than the knowledge of the good it had accomplished.

The first time I saw Doctor Rowell he was standing by the desk in his office, engaged in a warm argument. The favorite theme of politics which the word argument suggests goes wide of the fact. The Doctor sometimes argued on other subjects.

"I know, Manuel," he was saying to the weather-stained and dilapidated foreigner who spoke brokenly but with Latin fervor for the affirmative. "I know I went to see you a good many times, and the wife and the babies, but it's all in the day's work. Sometime when you get the mortgage off the land and the bills all paid you may give me something, but not now. You're not able to work much yet, and the wife and children will need more clothes this winter. No, sir, you can't give anything now."

Manuel raised his hands and voice again in hopeless protest, but the uplifted finger and decisive shake of the head which met his broken protest left no room for further argument, and he shuffled out the door and down the stairs. When he passed me there were tears in his eyes and on his face.

I did not know it then, but the incident had told me the history of Doctor Rowell's life. It was the history in point of time and labor of nearly forty years of busy life.

Columns could be written in illustration of the life and character of Doctor Rowell, but the facts are too well known, the remarkable personality is too familiar for such indulgence on my part. Doctor Rowell served faithfully the generation in which he lived. He helped those who were close at hand, not those who were far away. As a citizen he was alert and loyal. As a friend he was always ready to serve where service was most needed and never for reward. As a physician he lived the best standard of ethics, under the ideals of which must of necessity be an unselfish profession. He sought to alleviate, to help, not to gain reputation or fortune. No advertisements marked the way to his office, but no weary or afflicted ones sought in vain to find it. There were many to point the way.

And so there will be wider, truer sorrow in Fresno than if any other one had passed away. For he is gone who respected wealth but loved the poor, who admired success but helped those who failed, whose humanity was broad enough and heart large enough to reach us all.

EXPERT TESTIMONY.

Resolutions Regarding Expert Engineering or Technical Testimony Adopted by the Pacific Association of Consulting Engineers, December 1, 1911.

The Pacific Association of Consulting Engineers, organized in 1911 with headquarters in San Francisco, by engineers having membership in one or more national engineering societies, unanimously adopted the following resolutions. These resolutions have been sent to members of the judiciary and the legal profession, to engineers and to officers of medical societies who reside in the State of California. In all about 2500 copies of the resolutions have so far been distributed.

Replies received from judges, attorneys and physicians indicate a very strong probability that a bill or bills will be introduced at the next session of the California Legislature for the purpose of effecting some such reform as that suggested by our resolution.

It is, of course, apparent that whatever action is taken must affect the medical profession in relation to evidence just as much as it will affect engineering. The Board of Governors of the Pacific Association of Consulting Engineers has therefore been authorized by our membership to communicate with judges, lawyers, and physicians, and all other Californians interested, expressing the hope that some organized movement might be started, looking toward co-operation to bring about a wisely conceived legislation if on mature deliberation it should be found feasible at the present time. Engineers are aware that this subject has been receiving careful attention by lawyers and doctors, and would be pleased to join with them.

Resolution.

Whereas, This Association recognizes the serious objections inherent in, and views with disapproval, the prevailing method of procuring expert evidence

in cases at law in which engineers acting nominally as advisers of the court, are employed as witnesses and compensated by the respective litigants without the advice or co-operation of the court, being thus subject to partisan influence while in the discharge of non-partisan duty; and

Whereas, This Association is of the opinion that the usefulness of the engineer, both to courts and to litigants, in controversies requiring special engineering knowledge and experience, might be greatly extended and the ends of justice more fully conserved if a wiser order of procedure were instituted;

Resolved, That the officers of this Association be instructed to call, by formal communication, the provisions of our code of ethics bearing upon this subject to the attention of the judiciary of California, both State and Federal, and to the attention of the leading attorneys at law, either personally or through their bar associations, or both, with the request that they co-operate with this organization as opportunity offers in bringing about the changes desired.

The provision of the Code of Ethics referred to is as follows:

2. For the purpose of improving present court procedure in its relation to engineering practice, and for the purpose of increasing the efficiency of the engineering profession as an aid to the settlement of questions in controversy, this Association believes it desirable to restrict such engagements as soon as practicable to the following conditions:

a. As a witness when appointed by and compensated through the agency of the court.

b. As court commissioner, referee or other examiner, preferably sitting with an attorney, to take evidence involving engineering questions.

c. As arbitrator appointed by either party to the controversy, or by both parties jointly, through the agency of the court or otherwise, and compensated by both parties conjointly.

d. As special adviser to either contestant.

NEWS NOTES FROM NEWSPAPERS.

Merced has recently had a small epidemic of scarlet fever.

Dr. H. N. Rowell is a candidate for supervisor in Alameda county.

Dr. Chester Rowell of Fresno, left an estate valued at about $250,000.

In San Francisco, Dr. A. P. O'Brien is once more on the Health Board.

Monterey Presidio is to have a new annex to its hospital costing about $6000.

Stanford University Students' Guild is to have a new hospital costing about $7000.

Dinuba has recently acquired a sanitarium, built and equipped by Mrs. W. D. George.

Stockton authorities recently convicted a Gypsy woman for illegally practicing medicine.

The Oregon, Washington and Idaho medical associations met in joint session July 6th at Portland.

Jeannette S. Allison, D. O., has been elected president of health board of Monrovia. Another straw.

Los Angeles is to have a new Children's Hospital. Plans have been drawn and work will begin at once.

At Colusa, two men were recently fined $10 each for breaking quarantine; they were smallpox patients.

Fresno has been energetically at the "fly swatting" game. The Chamber of Commerce put up a $10 prize.

The Santa Rosa Hospital is to be carried on by Mrs. E. E. Briggs, widow of the late Dr. Briggs of that place.

Dr. M. V. Silbermark, chief surgeon of the Austrian Red Cross, has been visiting various places in California.

The St. Helena Sanitarium has been sued for $23,000 for burning a patient with hot bottles during an operation.

Dr. C. P. V. Watson of Los Angeles, was recently convicted of abortion and sentenced to three years in San Quentin.

Maricopa has passed a new city ordinance with the object of cleaning up the town and keeping it clean. Good luck.

The San Francisco Polyclinic has bought a lot on Jackson street near Polk and is to erect a new building for its clinics.

Smallpox keeps on its steady way. Two more cases have developed at Magalia, Butte county. But vaccination is a crime!

The wife of Dr. H. N. Barney of Richmond, died June 7th, from a fractured spine as a result of an automobile accident.

Redlands is to have a certified milk supply, largely through the activity of the San Bernardino County Medical Society.

Fresno County ranchers have been warned by the county health officer to muzzle or tie up all dogs during July and August.

Sacramento is prosecuting a Chinaman called Yung Wee Chun for advertising himself to be a physician when in fact he is not.

Sewage and garbage disposal are the problems which Dr. W. F. Snow, of the State Board of Health, has gone abroad to study.

Long Beach has organized a physicians' club with the object of promoting friendly relations between physicians. Good luck to it.

The new St. Mary's Hospital in San Francisco was dedicated in July. It is the testamentary gift of Mrs. Kate Johnson.

Hookworm has been found to exist in some of the truck farms of South San Francisco and a quarantine is to be asked against them.

Bubonic plague has appeared in Porto Rico and in Havana, Cuba. An appropriation of $500,000 is asked of Congress to fight this invasion.

Stockton is to adopt medical inspection in its schools, if the supervisors carry out the expressed wishes of the board of education.

Placerville has been having a nice little row over the plans for the new El Dorado County Hospital; no fatalities have yet been reported.

Bakersfield is reported to have waked up and begun the process of house-cleaning. It was certainly needed, as the health authorities urged.

"It is a disgrace to any community to have a death from rabies," justly and wisely says Dr. Ewer in his bulletin to the people of Oakland.

Dr. E. E. Stone, formerly superintendent of the Napa asylum, has been acquitted of the charge of embezzling $165 of the money of the State.

Dr. Frank Rattan of Martinez, Secretary of the Contra Costa County Society, has been quite seriously ill but we understand is improving.

Pasadena hospitals have come in for investigation under the eight-hour law and it is said that many violations of this law exist in other hospitals.

Los Angeles has a new infliction in the way of organized cranks; the California Anti-Vivisection Society has opened offices in the Queen City of the South.

Contra Costa county has been warned of the danger of rabies by a letter from the county health officer, Dr. S. G. Bransford, published in the local press.

Los Angeles had 1343 more births than deaths during the year ending June 30, 1912, but Dr. Powers thinks that several hundred more births were unreported.

In Stockton the senior class of the High School was recently given instruction on Municipal Hygiene by Dr. McGurk. A good example for other communities.

The American Federation of Sex Hygiene was incorporated on July 1st in New York. Dr. William F. Snow is given as one of the incorporators and directors.

In San Diego, Dr. A. D. Long has been appointed head of the health and development department of the Board of Education in place of Dr. F. J. Smith.

Stockton has completed and opened the new consumptive ward of the San Joaquin County Hospital. The building is quite up to date and cost about $14,000.

Garage managers are responsible for the safe keeping of automobiles in their charge, according to a case recently decided in Oakland in favor of Dr. Eva L. Harris.

J. C. Bohannon, the cancer quack of Oakland, has been sued for $5000 for crippling some fingers on the hand of one of his "patients." But the dear people do love quacks!

Health officers of the State will meet in Berkeley in September, according to the announcement sent out by Dr. Snow. Dr. W. A. Sawyer is in charge of the local arrangements.

Oakland has issued, through its Health Officer, Dr. Ewer, a bulletin on rabies for the education of its citizens. Let us hope they may "read, mark, learn and inwardly digest."

The tuberculin test for dairy herds was endorsed by the State Homeopathic Society at its last meeting in Sacramento. This society will hold its next meetings (1913) at Venice.

From San Francisco a dog was taken into Nevada. There it bit two boys and was found to have rabies. But let us not muzzle our dogs; it is quite unkind to their feelings.

Dr. George Converse, recently in charge of the Marine Hospital Service in San Francisco, has been appointed to take charge of the large sanitary work to be done at Iquitos, Peru.

Dr. J. A. McKee, of Sacramento, has announced that he is a candidate for the state senate. Dr. McKee served as senator from his district in the 36th and 37th sessions of the legislature.

Dr. Creighton Wellman, who lived in Oakland for awhile, a few years ago, and is now at Tulane University, has been giving a course of lectures on Hygiene at the University Summer School.

The California State Nurses' Association held its annual meeting in San Francisco toward the latter part of June, and it is said to have been one of the best meetings this association has held.

Dr. E. W. King, who was for eighteen years the superintendent of the Ukiah Insane Asylum, has resigned and located in San Francisco, where he is devoting himself to mental and nervous disorders.

In spite of attempts to secure a "safe and sane" Fourth, five boys were injured in San Francisco on that day. But the number of casualties throughout the State was much lower than in the previous noisy years.

A judgment in the sum of $2500 was recently given against Dr. A. M. Stafford at Corona. Unfortunately for him, Dr. Stafford was not a member of the State Society and had to defend the case himself.

The right of the State University to exclude an un-vaccinated student has been upheld by the trial court. It is said the case will be appealed and the constitutionality of the law tested in the court of last resort.

The State Hygienic Laboratory is now preparing Pasteur treatment under the direction of Dr. W. A. Sawyer. The laboratory has been inspected and approved by Dr. D. H. Currie of the Marine Hospital Service.

Oroville recently closed two houses in its tenderloin on account of smallpox. It is singular how a dreaded disease will "discover" such "houses" when the authorities in other circumstances do not know they exist!

"If the worthless doctors could be eliminated, and the competent doctors kept busy and properly paid, it would be a great thing for the profession as well as the public," says the Los Angeles Herald. Quite true—"if."

San Diego is promised a brand new industry; a factory to make instruments of "tempered gold" by a secret process. It seems an out-of-the-way place to put a factory. Let us hope it does not turn out to be a gold-brick factory.

Fresno is building a convention hall and numerous civic organizations have asked the city fathers that it be named Rowell Auditorium. The name of Chester Rowell should certainly be commemorated by Fresno in some fitting manner.

Dr. Arthur H. White has sued Dr. Philip King Brown, both of San Francisco, for $100,000 for libel (or slander). Dr. Brown answered the suit by charging Dr. White with all sorts of shortcomings when he was warden at the City and County Hospital.

Los Angeles has been having a nice little rumpus with its many freaks. They had a vote and turned down the proposition to require tuberculin-tested milch cattle. Then the cranks wanted to fire Dr. Powers, one of the best health officers in this country. But the Mayor would not stand for it.

Bakersfield has had a number of cases of typhoid and the health officer, together with the officers of the County Medical Society, have been appointed a committee to thoroughly investigate the matter. This is as it should be; what is a medical society for?

Napa city and county officials were recently addressed on the subject of public health measures by Dr. W. A. Sawyer. It would be well if the State Board of Health could arrange more of these official conferences between city and county officials and officers of the board.

California, says Dr. Snow, could build, man and maintain one battleship each year from the money saved if the same amount of business energy were applied to the tuberculosis problem that is being applied to the Panama-Pacific game. Perhaps it does not appeal to business men because there would not be so many banquets!

Alameda County citizens have just discovered that the county hospital and infirmary is a disgrace; a wagon shed was used to house sixteen patients. Probably these good citizens will try to blame this upon the medical profession, in some way; that is generally the case.

Los Angeles provided an all-day free picture show for the edification and instruction of its school children, in June, and it is said that thousands of children took advantage of the free show. The moving picture as an educational instrument is just beginning to be recognized.

Berkeley objects to the use of "A Primer of Sanitation," in its schools because it will educate the children to believe that germs exist and that serum therapy is the only salvation of the nation; these are also said to be the views of Berkeley's mayor. That's going some for a high-brow community!

San Diego is growing so fast that an up-town receiving hospital for the care of emergency cases is under consideration by the city fathers. The supervisors of San Diego have turned down the excellent suggestion of the County Medical So-

ciety to nominate the medical officials for the county hospital.

Dr. R. G. Broderick of San Francisco, delivered a public talk on tuberculosis in San Jose. There ought to be more of these public lectures on health matters in every community in the State. Let the people know the truth and then if they want to go on having needless diseases the responsibility is theirs.

"Nostrums and Quackery," a book that should be in the waiting room of every physician, was referred to in this Journal some time ago and the price was erroneously given as 50 cents. The price of the book is $1, and it is cheap at that. Copies can be had by addressing the Association, 535 Dearborn avenue, Chicago, Ills.

Dr. O. D. Hamlin, President of the State Society, was injured in an accident in Chicago June 16th. A horse-cab ("one-cylinder hay burner"), ran away with him and got smashed; in the smash-up Dr. Hamlin's knee was injured, though not as seriously as at first reported. At the time of writing, Dr. Hamlin is once more out and around.

In Santa Ana a rather unusual suit has been brought against a firm of druggists by Dr. E. L. Enochs. He advertised in the local papers and, it is said, used some phrases which were objected to by the reputable physicians of the section. He also stated or intimated in his advertisements that the drug firm was vouching for him. They sent letters to the physicians thereabouts denying the inferred support and now Enochs has sued them for slander.

Outrageous officiousness caused the arrest of Dr. Oscar Mansfeldt, in San Francisco, early in July. Dr. A. H. Wright was accused in a dying statement of having performed an abortion on a Mrs. Brown. The patient called in Dr. Mansfeldt but he was unable to save her life; the police arrested him for failing to report a crime. The police seem to think the medical profession should be used as an aid to the detective bureau and that professional secrecy should not exist. They were obliged to release Dr. Mansfeldt.

REMEMBER!

Protection by the State Medical Society

PROTECTS!

Does An Insurance Policy Really Protect?

THINK IT OVER

BOOK REVIEWS

Nervous and Mental Diseases. By Church and Peterson. Published by W. B. Saunders Co., with 343 illustrations. Philadelphia, 1911.

This book has reached its seventh edition, showing a substantial and merited popularity. The book is well written and illustrated and takes up the various subjects in a clear and instructive manner. Many chapters have been largely rewritten and a goodly amount of recent work finds its way into the text. The important contribution of L. Newmark to the literature on the subject of Hereditary Spastic Paraplegia deserves more than the mere reference to the first article of several which have since appeared on this originally described form of familial diseases. W. F. B.

Manual of Diseases of the Eye, for Students and General Practitioners. By Charles H. May, M. D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York, 1890-1903, etc. Seventh edition, revised. With 362 original illustrations, including 22 plates, with 62 colored figures. New York, William Wood & Company, 1911. Price, $2.00.

In presenting the seventh edition of this handy book, May has added a new chapter on the Ocular Manifestations of General Diseases, and also includes Trachoma Bodies, Lagrane's Operation for Glaucoma, the use of Salvarsan, Kronlein's Operation, and Injections of Tuberculin. As in previous editions, the text-book is well illustrated and the print is good; and as a one-volume treatise for students and general practitioners, can be recommended. W. S. F.

United States Bureau of Education. Bulletin 1912, No. 7. The Educational Status of Nursing, by M. Adelaide Nutting, Director of Nursing and Health, Teachers College, Columbia University, New York. Late Superintendent of Nurses and Principal of Training School, Johns Hopkins Hospital, Baltimore, Md.

This Bulletin should be carefully read by all authorities of Nurse Training Schools and especially by all people who in any way are connected with hospitals which have training schools. Miss Nutting has carefully analyzed tables that have been compiled by the Commissioner of the Bureau of Education. These tables show in tabular form the length of the course, the instruction given and other details of all the training schools for nurses in the United States. Miss Nutting's analysis goes into the matter very carefully and shows that although the standard of training schools has materially improved during recent years we still find many schools that are not worthy of the name and that the average school is far below what should be considered the ideal. She most clearly shows that there is need of regulation of training schools and that hospitals should not be permitted to graduate nurses unless they can offer them a real course of study. W. R. D.

Practical Medicine Series—1912. Vol. I, General Medicine. Billings & Salisbury.

In this volume the reviewer notes with regret that a certain definiteness, a certain ring of authority seems to be missing, as contrasted with the former volumes seen. This is especially noted in the remarks on Spengler's I. K. treatment for tuberculosis. On the other hand there are a number of valuable abstracts on arthritis, on the use of the electro-cardiagraph, diet in diabetes, and diagnostic methods in tuberculosis. These latter are placed before the reader in a well digested

form and show careful editing. It may be that the literature in the last few months has been so voluminous that the editors have not been able successfully to cope with its bulk; still the reader who subscribes to this series does so with the idea of adding to his stock of knowledge of established facts and theories rather than further to confuse the great mass of conflicting opinions and evidence that bewilders the faithful reader of current medical literature. In brief, this last volume is at best a leaky filter for the stream of modern medical and near-medical thought; therefore its dependability as a source of clear and definite judgment is decidedly lacking. G. H. T.

Laboratory Methods, With Special Reference to the Needs of General Practitioner. By B. G. R. Williams, M. D., and E. C. Williams, M. D. Published by C. V. Mosby Co., St. Louis, 1912. Price $2.00.

The average "general practitioner who desires to make, easily and inexpensively, examinations on which he may depend," will find this book a most useful guide, not only in the country, but in the city as well. There are many men, fairly well trained, who never do any laboratory work, because, if we accept their excuses, (1) it is the work of specialists, (2) it is far too complicated and difficult, (3) it takes too much time, (4) it requires a well equipped and expensive laboratory. Reading this small book will convince these gentlemen of the weakness of their excuses. It will teach them a simple method, a reliable one at that, of doing every laboratory test commonly employed and of clinical value. It includes such chapters as "Essence of Tissue Diagnosis," "Detection of Common Poisons," "Milk and Its Home Modifications," "Technic of the Private Post-Mortem," etc. To the laboratory worker or the physician accustomed to complicated methods, bacteriological, chemical and pathological, acquired in recent courses as given in our best schools, this book has necessarily nothing to offer. R. B.

The Parasitic Amoebae of Man. Charles F. Craig, M. D., Captain, Medical Corps, U. S. A. J. P. Lippincott Co. Philadelphia and London. 1911. Price $2.50.

BOOKS

The literature bearing on the work of former investigators has been adequately reviewed by the author, and is accompanied by a quite complete number of references. His writings are simple and clear, and especially commendable for their exactness and detail. His chapter on "Technique," as well as his very complete description of the "Amoebae of the Intestinal Tract," are especially commendable; the illustrations are satisfactory. Doubt may be expressed by some equally experienced investigators as to whether our knowledge yet justifies such positive statements as to species, as his chapter on "Classification and Nomenclature" would imply. It would appear that more space has been devoted by the author to recording his disagreement with the opinions of other investigators than a work of this character would absolutely require. While apparently doubting, if not actually disbelieving the claim that parasitic amoebae can be cultivated, the author presents and discusses the works of other investigators, and in doing so apparently shows slight inconsistency by rejecting, in all parts of his book, the cultural claims of certain investigators, in part on morphological grounds, but in the same chapter "protest against the growing tendency of drawing conclusions regarding the morphology and life cycle of the parasitic amoebae as observed in man from organisms growing upon artificial culture media," for the reason that the "appearance of the amoebae in such cultures would probably be erroneous, as it is well known that the cultural forms of protozoa . . . differ markedly in their morphology and life history from the forms observed in the human host." From his own presentation of the evidence, it would appear that his conclusion, "The entire subject of the cultivation of the parasitic amoebae is in a chaotic condition," is entirely justified, but in the face of this opinion, the author himself appears to have drawn a more positive conclusion on the subject than the chaotic state of the evidence would justify. Taken as a whole, this work is an excellent contribution to the subject treated, and will be found invaluable to all persons interested in the amoebae. D. H. C.

Principles and Practice of Physical Diagnosis. By John C. DaCosta, Jr. Second Edition. W. B. Saunders Co. Philadelphia and London. 1911.

This book might more properly be entitled "The Pathology and Diagnosis of the Diseases of the Heart and Lungs." After some 60 pages on general methods and technic, the bulk of the book is given up to the thorax and its viscera. This section is well written, concise and interesting as the author seems to be at home in his subject. There are several photographs of actual cases which well illustrate the first chapter.

The following short section on the abdomen is not in proportion to the rest of the book, and in subsequent editions it should be either strengthened or left out. For instance, pneumoconiosis is given three pages, almost entirely on the pathology, while on page 496, the x-ray examination of the stomach is dismissed with nine lines and a plate erroneously labeled "Hour-glass stomach." Now that we know the safety of the oxychloride and subcarbonate of bismuth it is surprising to see in a new book that we are to use "A pint of kefir, etc., with 1 oz. of 'bismuth' and that the mixture should be siphoned out after the examination so as to prevent toxic symptoms." The author is painly not conversant with the great value of the six, twenty-four and forty-eight hour pictures in determining the motility of the stomach and intestines.

Although it may be true that "The average internist cannot hope, nor does he desire, to have more than a bowing acquaintance with x-ray technic," we believe that the younger men looking forward to a career in internal medicine will be greatly handicapped in later years if they do not now learn something of the technic of radiography as well as the interpretation of plates. If the author had been more conversant with the newer physiology and pathology of the stomach we might have been spared the surface topography diagrams on pp. 493 and 504. There we see the horizontal school-physiology stomach with the fundus covered by the ribs and the pylorus stuck over onto the tip of the eighth rib. The diagrams of gastretasis, gastroptosis and hour glass stomach are rather amusing after the published work of Holzknecht, Groedel, Hertz and others.

The author is much given to remembering the names of the originators in medicine and this is a good book to turn to to find what is Brown's sign or Jones' point. It is rather amusing, however, to find Clado and Morris crowding McBurney off his point. They carefully start from different places but all arrive at about the same spot. A careful search of the literature would undoubtedly reveal more contestants. James Jackson, for instance, clearly described this point in 1855. (Letters to a Young Physician, p. 249.)

It would seem that we have enough good books of this type, of interest mainly to under-graduates, and what we now need in America are good monographs by masters in the different fields. Medicine has widened out so much and the advances are so rapid that one man cannot hope to write a book that will cover the whole field of diagnosis evenly and with life in every section. W. C. A.

Christ Among the Cattle. Frederic R. Marvin. Boston. Sherman, French & Co. 1912.

Exercise and Health. Woods Hutchinson, M. D. New York. Outing Publishing Co. 1911.

Outlines of General and Surgical Nursing. Winifred F. Lindsay, Superintendent of the Training School for Nurses of the Paradise Valley Sanitarium, National City, Cal. Loma Linda, Cal. The College Press.

REASONABLE PROTEST; HEED IT.

To the Editor of the State Journal: On behalf of those members of the medical profession who, like myself, are devoting themselves to laboratory work, I wish to present a protest against the practice prevailing among many physicians of sending their patients to purely commercial laboratories for various tests and examinations. No ethical physician sends his patient to an optician when he wishes him tested for glasses, nor does the eye-specialist refer his physically ill myopic to a druggist for advice or treatment to relieve his symptoms. Even the orthopedist usually takes the measurements of his patient's limb himself when about to order a brace or other purely mechanical apparatus to correct a deformity, instead of entrusting it entirely to the trained and thoroughly skilled mechanic who is to make the apparatus. Under no conditions does a physician, whatever his specialty may be, refer a case to "quacks" or laymen for physical examination or diagnosis. Why then should he send his patients to laymen for a diagnosis of anemia, tuberculosis, gonorrhea, syphilis, or any other condition in which a laboratory examination is necessary? True, in some instances a well-trained and conscientious layman can do this work very accurately, but in many cases, and especially in the complement fixation tests, only the medically trained expert can read and interpret his findings correctly, and render an accurate and helpful report to the physician caring for the case and depending on the test to assist him in the diagnosis or the regulation of the treatment. Two excuses are given by those who plead guilty to the habit of passing by their professional brethren and giving their work to those outside of medical circles. One is the lower rates charged by the non-professional worker; the other is the fear that those physicians who combine laboratory work with general practice might deliberately or unconsciously "steal" their patient from them. True, the commercial laboratories have instituted a scale of prices averaging about one-fifth of the usual professional rates, but is it fair or just that the well-to-do patient should get his work done at one-fifth of its value, and is not the professional laboratory expert just as willing to reduce his charge for a Wassermann test for a poor patient, at the request of the attending physician, as the surgeon is to do a $500 operation for $50, if that is all the low-salaried man with a family to support can possibly afford to pay for parting with his appendix? As to the other objection, the non-professional worker is quite likely to have some special favorite among the doctors to whom he will try to turn other physicians' patients if he finds he can do so without detection. Here the individual sense of honor is the controlling factor, not the fact that the laboratory worker is or is not a graduate of medicine.

In conclusion, let me remind my colleagues in the profession that now, as of old, the "laborer is worthy of his hire" and entreat them to give their professional brethren the preference over those who, because they have not spent so much time and money in preparation for their work, claim to be able to do it for all classes at such unfairly reduced charges. A. W.

THE PHARMACIST AS THE PHYSICIAN'S MENTOR.

For some time past the National Association of Retail Druggists has been conducting a propaganda which had for its aim the replacement of proprietary preparations by preparations official in the United States Pharmacopoeia or the National Formulary. While the complex mixtures of the Pharmacopoeia and the Formulary are no more scientific than the proprietary preparations whose place they are recommended to take, they have it in their favor that their composition is known and that they are not advertised by extravagant claims that are liable to lead both physicians and the public to use them injudiciously.

While insofar the "U. S. P. and N. F. Propaganda" deserves our endorsement the recent attempt to "force them down our throats" by lectures on materia medica and therapeutics should not be countenanced. While it is true that the instruction in materia medica and therapeutics in medical calleges has not been all it should be, nevertheless it has not been of such inferior character as to warrant the pharmacist in setting himself up as the physician's mentor. The following protest is made by the Journal of the Indiana State Medical Association (June 15, 1912, p. 275), against an article in the N. A. R. D. Notes, April 4, 1912, which attempts to popularize Elixir Corydalis Compound, an obsolete shot-gun formula of the N. F.: This is an aromatic elixir containing turkey corn, stillingia, prickly ash, blue flag, and potassium iodid. It is claimed that the activity of each of these drugs is increased and the value of the elixir greatly enhanced, through being thus combined. With the assurance of matured wisdom this drug journal tells us:

"It is an efficient alterative of great value in favorably modifying the general morbid processes of certain constitutional diseases. Physicians ought to thoroughly acquaint themselves with this preparation for it is a remedy par excellence.

"Its laxative properties, if not sufficient, may be enhanced by the addition of Cascara Sagrada or Podophyllin.

"This preparation has a decided tonic action in the third stage of syphilis, in chronic rheumatism, and is distinctly stimulating to the intestinal glands."

The spirit of perversity impels us to ask: How does this self-constituted instructor know these things? In these days when all statements are being put to the test and the opinions, which attributed the mysterious power of alteratives to such remedies as sarsaparilla, are dissolving like mist before the morning sun, it becomes the druggist to wait patiently for further knowledge rather than to confuse the issue by raising the old war cry. How happens it that the N. A. R. D. can tell us so confidently what years of investigation have not disclosed? The trained pharmacologist cannot discover the alterative or tonic properties of corydalis, or stillingia, prickly ash or blue flag. What does the retail druggist know about them that he should vaunt this mixture of cast-off herbs as "a remedy par excellence"? Who is the physician so ignorant as not to know that he can supplement laxative action by another laxative if he wishes? Or was this lesson written at space rates and this statement thrown in to fill up?

But we forget the potassium iodid. Of course, the physician sometimes forgets potassium iodid to the great detriment of his patient. In the great emergencies when drugs must be used with a bold hand what is so likely to lead to failure as the fact that this life-saving agent is concealed in a mixture of worthless adjuvants? The doctor forgets what it is that will cure the disease because of the claims made for the other wonderful alteratives.

And now let us ask why all this laudation of a formula, the ingredients of which have been tried

and found wanting? The answer readily occurs. Dollars and cents. Easy money. Were it not for support from trade interests such preparations as Elixir Corydalis Compound would sink from the weight of their own worthlessness into that limbo where repose such ancient and once honored remedies as the blood of the black cat, skunk's oil and the mold from worm-eaten skulls.

It is time to face the facts. The medical profession as represented by the American Medical Association with its ideals of public service, its ethical principles as to the exploitation of remedies, its progressive program in therapeutics, as voiced by the Council on Pharmacy and Chemistry stands on another plane from that occupied by trade organizations whose sole object is to advance the economic interests of their members. Unfortunately the drug business is a trade and a part of that commercial world whose warring interests necessitate that everything shall bow to so-called business principles. When the American Pharmaceutical Association provided us with the National Formulary, it did a meritorious act, and we physicians may gladly employ some of its formulas; but when the N. A. R. D. assumes to instruct the doctors which formulas they shall use and how they shall use them, it becomes an impertinence not to be tolerated.

It should be remembered that it is the druggist's interest to sell as many drugs as possible; it is the doctor's duty as well as his interest to cure his patient whether the drugs used be few or many. The trade has its rights as long as it keeps its place but in the struggle between various economic interests it should be kept in mind that the place of the doctor is on the side of the suffering public and of the individual patient who is his employer.

TAKA-DIASTASE AGAIN FOUND WANTING.

While Parke, Davis & Company's Taka-Diastase preparations were at one time described in New and Non-official Remedies, the Council on Pharmacy and Chemistry reconsidered the acceptance of these preparations some three years ago, because the specimens as found on the market did not have the properties claimed for them. Evidently considering that three years time was ample to permit the exploiters to improve their products so as to make them comply with the claims made or else to modify these claims to agree with the products offered for sale, the Council again purchased specimens of Taka-Diastase and Liquid Taka-Diastase on the open market and determined their starch converting power. From the report (Jour. A. M. A., July 6, 1912, p. 50), of the Council it is seen that Parke, Davis & Company still make exaggerated claims for the amylolytic power of their digestants and that the firm proposes to continue these unwarranted and misleading claims in spite of the comprehensive chemical examination and the opinion of a special referee, a member of the Council's staff of clinical consultants, which were presented to the firm.

Coming from a firm which, in the past, has laid much emphasis on the reliability of its products, this decision to sell some of its preparations under claims which are plainly misleading, is difficult to understand.

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Nonofficial Remedies, 1912, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies."

Proferrin is a compound of iron and milk casein. It is tasteless, insoluble in water and dilute acids, slowly soluble in alkalies. It is used as a ferruginous tonic. It undergoes very little change in the stomach but is said to be quickly digested and absorbed in the intestine. Its hematogenous actions resemble those of other organic iron preparations. Dose, .13 to .3 Gm. (2 to 5 grains). It is also marketed in the form of tablets, each containing, respectively, 0.065 Gm. (1 grain), 0.15 Gm. (2½ grains) and 0.3 Gm. (5 grains). H. K. Mulford Co., Philadelphia, Pa. (Jour. A. M. A., May 4, 1912, p 1356).

Tyramine is para-hydroxy-phenyl-ethyl-amine hydrochloride OH. $C_6H_4.CH_2.CH_2.NH_2HCl$, the hydrochloride of synthetically prepared para-hydroxy-phenyl-ethyl-amine. Taken internally or injected subcutaneously tyramine increases the blood pressure; it is also claimed to be valuable for producing post-partum contraction of the uterus. The action is similar to epinephrine, being weaker and slower, but lasting longer. It it marketed in the form of hypodermic tablets (Tabloid Tyramine Hypodermic) each containing 0.02 Gm. (1-3 grain), Burroughs Welcome & Co., New York (Jour. A. M. A., May 4, 1912, p. 1356).

Tuberculin-Rosenbach is an "old tuberculin" modified by growing in a culture with Trichophyton holosericum album. It is claimed to be less toxic but more efficient than other forms of tuberculin. The validity of these claims is not fully confirmed. Kalle & Co. New York (Jour. A. M. A., May 4, 1912, p. 1356).

Cresatin is a meta-cresyl, acetate, $CH_3.C_6H_4.O(CH_3CO)$, the acetic acid ester of meta-cresol. It is said to be antiseptic and analgesic and is recommended for use in the treatment of affections of the nose, throat and ear, such as follicular tonsillitis, nasal suppuration due to ethmoidal diseases, atrophic nasopharyngeal catarrhs, furunculosis of the external auditory canal and purulent otitis media. Schieffelin & Co., New York (Jour. A. M. A., May 25, 1912, p. 1582).

Pharmaceutical preparations of accepted articles:

Novocain Tablets "D" each containing novocain 0.2 Gm (3 grains).

Novocain Tablets "F" each containing novocain 0.05 Gm. (¾ grain).

Novocain Suprarenin Tablets "A" each containing novocain 0.125 Gm. (2 grains), and suprarenin 0.000125 Gm. (1/500 grain).

Novocain Suprarenin Tablets "B" each containing novocain \$.1 Gm. (1½ grain), and suprarenin 0.00025 Gm. (1/250 grain).

Novocain Suprarenin Tablets "C" each containing novocain 0.1 Gm. (1½ grain), and suprarenin 0.000083 Gm. (1/1000 grain).

Novocain Suprarenin Tablets "E" each containing novocain 0.02 Gm. (1/3 grain), and suprarenin 0.00005 Gm. (1/1200 grain) (Jour. A. M. A., May 4, 1912, p. 1356).

Cholera Bacteria, Mulford is designed for the purpose of immunizing against cholera and contains killed cholera vibrios. H. K. Mulford Co., Philadelphia (Jour. A. M. A., June 1, 1912, p. 1685).

Typho-Basterin, Mixed, Mulford, is a typhoid vaccine containing killed Bacillus typhosus and Bacillus paratyphosus A and B. H. K. Mulford Co., Philadelphia (Jour. A. M. A., June 1, 1912, p. 1685).

Bismuth Beta-Naptholate (Bismuthi Betanaphtholas) is a bismuth salt of beta-naphthol. It is a brownish or grayish powder without odor, almost tasteless and insoluble in water. It is decomposed into its constituents in the intestines and hence is used in catarrhal and fermentative gastro-enteric disorders, such as gastritis, dysentery, diarrhea, etc. Dose, for children, 0.1 to 0.3 gm (1½ to 5 grains) and for adults, 1.5 to 5 gm. (22 to 75 grains) daily.

Bismuth Beta-Naphtholate, Mulford complies with the description given above. It is also marketed in the form of tablets each containing 0.3 gm. (5 grains). H. K. Mulford Co., Philadelphia (Jour. A. M. A., June 15, 1912, p. 1857).

CHANGES OF ADDRESSES.

Cluness, W. R., from 406 Sutter St., to 900 Union St., Alameda, Cal.

Shaffer, C. P., from Reedley to Alhambra, Cal.

Tillotson, C. A., from Coalinga to New York.

Stevens, Burt S., from Woodland to San Francisco, Cal.

Dunn, R. H., from 2122 Market St., San Francisco, to No. 3 City Hall Ave., San Francisco, Cal.

Carter, R. S., from 832 5th St., San Diego to Timken Bldg., San Diego, Cal.

De Lucis, C. A., from 444 Montgomery Ave., San Francisco to 1703 Powell St., San Francisco, Cal.

Brusco, H. D., from 916 Kearny St., San Francisco to 583 Green St., San Francisco, Cal.

Tausig, E., from 916 Kearny St., San Francisco to 346 Montgomery Ave., San Francisco, Cal.

Day-Bew L., from 1895 Sutter St., San Francisco to Los Gatos, Cal.

Spalding, A. B., from 240 Stockton St., San Francisco to Lane Hospital, San Francisco, Cal.

Kurtz, Joseph, from Douglas Bldg., Los Angeles to 1801 Toberman St., Los Angeles, Cal.

Nuckolls, W. L., from Kingsburg to San Francisco, Cal.

Blumenberg, S. P., from 362 Kearny St., San Francisco to 1112 Market St., San Francisco, Cal.

Von Werthern, H. L., from San Francisco to Tulare, Cal.

Blake C. R., from Bank Bldg., Richmond to Pillow Bldg., Richmond, Cal.

Caesar, Wm. J., from Boulder Creek to Pillow Bldg., Richmond, Cal.

Burbank, H. E., from address unknown to Oakdale, Cal.

Cook, Wm. H., from McKittrick to Hot Springs, Cal.

Toland, M. R., from Los Angeles to Pomona, Cal.

Lavenson, R. S., from Title Ins. Bldg., Los Angeles to Bradbury Bldg., Los Angeles, Cal.

Hadley, F. H., from Los Angeles to Grant Bldg., San Francisco, Cal.

Howard, E. S., from 960 Steiner St., San Francisco to 2161 Sutter St., San Francisco, Cal.

Eastman, M. E., from Alturas to New Pine Creek, Cal.

MacFarlane, N., from 5334 S. Park, Los Angeles to American Bank Bldg., Los Angeles, Cal.

Savage, Wm. W., from address unknown to Fresno, Cal.

Skoonberg, A. E., from Haight and Fillmore Sts., San Francisco to Koenig Bldg., San Francisco, Cal.

Bennett, Laura, from Pacific Elec. Bldg., Los Angeles to Box 397, San Pedro, Cal.

Beck, J. E., from Tulare to Modesto, Cal.

Phelan, H. du R., from Honolulu to Fort Barry (Marin Co.), Cal.

Mahan, Eugene F., from 1041½ Castro St., San Francisco to Pacific Bldg., San Francisco, Cal.

Fuller, L. H., from address unknown, to 623 West Fifth St., Los Angeles.

Hunt, D. W., from 446 Pelmont St., Glendale, to 442 Belmont St., Glendale.

Mitchell, F. W., from Brower Bldg., Bakersfield, to Producers' Bank Bldg., Bakersfield.

Guinan, Edw. R., from 2257 2d St., San Francisco to ————?

Cutter, J. B., from Los Angeles, to Watsonville.

Jones, C. P., from Grass Valley, to Europe.

Walsh, Jos. F., from San Francisco, to Grass Valley, Cal.

Hollister, J. C., from Los Angeles, to Altadena.

McRae, D. M., from Oakland, to Veterans' Home, Napa, Cal.

Jacobs, Jay, from San Francisco, to Winters, Cal.

Galehouse, F. C., from San Francisco, to San Rafael.

Carmichael, M. F., from Oakland, to Children's Hospital, San Francisco.

Bixby, W. E., from Cowell to ————?

Best, E. J., from University Hospital, San Francisco, to 240 Stockton St., San Francisco.

Thompson, C. P., from 305 6th Ave., San Francisco, to 2304 Clement St., San Francisco.

Bullard, Chas. Treat, from Los Angeles, to Hume (Fresno Co.).

Bradfield, G. M., from City and County Hospital, San Francisco, to 416 Hayes St., San Francisco.

Frary, L. A., from Cloverdale, to Shaver, Cal.

Rea, R. R., from Chamber of Commerce Building, Los Angeles, to San Fernando Building, Los Angeles.

Martindale, John H., from Birche, Maine, to California Club, Los Angeles.

Bassett, F. W., from Lissner Building, Los Angeles, to I. W. Hellman Bldg., Los Angeles.

Fisher, Mary E., from address unknown, to 460 56th St., Oakland, Cal.

Gaynor, J. J., from address unknown, to Hotel Harcourt, San Francisco.

Walker, Agnes, from Hotel Normandie, to 350 Post St., San Francisco.

Wigand, T., from 4th Ave. and Clement St., San Francisco, to 1320 24th St., San Francisco.

Michelson, Lewis, from 2735 Webster St., San Francisco, to 209 Post St., San Francisco.

Stone, E. E., from 1190 Pine St., San Francisco, to 3284 Jackson St., San Francisco.

Wilcox, G. B., from German Hospital, San Francisco, to 1751 Market St., San Francisco.

Blackmun, E. L., from 531 E. Main St., Stockton, Cal., to Ruhl Bldg., Stockton, Cal.

Gedney, F. M., from Hobart Mills, to 3013 Fillmore St., San Francisco.

Leonard, I. V., from 2370 Mission St., San Francisco, to 999 Sutter St., San Francisco.

Arnold, Chas., S:. from Central Bank Bldg., Oakland, to Oakland Bank of Savings Bldg., Oakland, Cal.

Leonard, Ethel L., from Consolidated Realty Bldg., Los Angeles, to California Bldg., Los Angeles.

Hill, R. C., from 660 Market St., to 133 Geary St., San Francisco.

McNulty, A. H., from Examiner Bldg., to Phelan Bldg., San Francisco.

Trevelyan, G. H., from Arlington to ———— ?

Crance, C. C., from 2161 Sutter St., San Francisco, to 1155 Bush St., San Francisco.

NEW MEMBERS.

Greenwood, Earl N., San Francisco, Cal.
Thompson, C. P., San Francisco, Cal.
Kilgore, E. S., Berkeley, Cal.
Tower, F. J., Pasadena, Cal.
Pritchard, Frank H., Colton, Cal.
Hieronymus, A., Alameda, Cal.
Kierluff, H. N., San Quentin, Cal.

RESIGNED.

Davidson, Thomas, Los Angeles, Cal.
Hunt, D. W., Glendale, Cal.
Galehouse, F. C., San Rafael, Cal.
Cleary, George, Petaluma, Cal.

DEATHS.

Fife, John, Red Bluff, Cal.
Rowley, Milton M., Berkeley, Cal.

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Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. X SEPTEMBER, 1912. No. 9

EDITORIAL NOTES.

FAILURE OF THE INSURANCE BILL.

What is known in England as the insurance bill, a measure providing for the insurance of all wage-earners of a certain class and for their medical attendance in case of injury, etc., has met with a distinct setback. It undertook to legislate the amount of compensation that should be paid to the physician for his services. It raised a storm of protest from the members of the British Medical Association who considered that the compensation fixed by the bill was totally inadequate. It certainly is "contract practice" by wholesale, and the compensation for that sort of practice is usually not large. Something over 27,000 physicians of Great Britain have agreed to refuse the compensation offered in the act and to do no work whatever for the government under it. This action, which is said to have been made official at a special meeting of the British Medical Association July 23rd, of course makes the act a dead letter. The whole incident is, however, very instructive. The original passage of Mr. George's insurance bill, which was called extreme socialism, was but an indication of what many people have said would some day come to pass; that the state would take over the medical care of the people. The refusal of physicians to accept what they consider an *insufficient* compensation does not contradict the probable truth of the assumption; quite the reverse; it indicates that the state will do so under proper conditions.

FANATICAL ATTACKS.

All over the world there seems to be a wave of fanatical attack upon medical science that has shown more distinctly in the United States, and particularly in the West, than elsewhere. It is very difficult to understand. Of course certain elements of this movement in opposition to scientific medicine are plain enough; the eddyites, the dishonest manufacturing element behind the "league for medical freedom," and the like. But they do not explain it satisfactorily; they do not explain, for example, the remarkable case of the libel action against Dr. Bashford, in England, which was referred to editorially in the August issue of the JOURNAL. They do not explain the increasing number of antivaccination societies and of antivivisection societies. They do not explain why honest, educated and presumably sane people will be carried away into these waste places of the ignorant. The editor of New York *Life* is a well educated and presumably sane man, and yet we all know the anti-everything-about-progressive-medicine attitude that *Life* takes. Medicine has passed out of the fetish stage of existence, in the public mind; perhaps the average person likes the fetish thing and so has gone to the place where he can get it—the eddyite and the various other freak cults. It may be that it is because the old medicine is gone and the new, scientific medicine, the people have not yet learned about; they have not become convinced that science has really taken the place of the fetish. But even so, the situation is alarming and not at all easy to understand.

WHY THIS INVASION?

Why do so many physicians want to come to California? A year or two ago, when the matter was looked into, it was found that there was one doctor to about every 400 of population; and several hundred doctors have come in since then. For the August 1912 examination of the State Board of Medical Examiners, 202 applications had been received up to the time when the books close under the law, two weeks before the examination. Of these 194 had filed satisfactory credentials and 8 were pending investigation at the time of writing; we may safely say that at least 200 will take the August examination. If the average number pass, we will have 150 or more newly licensed physicians in an already over-supplied state. Why is it? Moreover, the Governor has said—or at least he is quoted as having said—that he was anxious to have the next legislature pass a very liberal reciprocity amendment to the present law regulating the practice of medicine; an amendment that would permit any physician licensed in any other state to come to California and practice. That would mean no medical law whatever, practically, for any one with a diploma can get a license in some state and then come here and the law would permit him to practice upon an ignorant public, no matter how poorly qualified he might be. It is commonly said that the legislature which is to convene in January will pass any law the

Governor desires, and if that is true then we can be quite certain that California will become, next year and thereafter, the veriest dumping ground in the world for quacks and half-baked, ignorant poorly equipped doctors. The people will, of course, suffer for it, but unfortunately they will not find this out till it is too late; and the general rank and file of the profession will be accused of permitting the disaster to occur, when in fact it is the people themselves that will have permitted it.

CARELESS CRITICS.

A careless and illconsidered word of criticism about some other physician's work may be as successfully the cause of a suit for alleged malpractice as malicious comment. Too many physicians unfortunately are in the habit of looking somewhat patronizingly upon the work of their fellows and when this attitude finds expression in words, the impression made is distinctly unfavorable to the other fellow. Undoubtedly, in very many instances such implied reflections upon another's work are thoughtless and careless; but the result is as bad as though they had been deliberate. The exciting cause of more than two-thirds of all suits for alleged malpractice is to be found in the comment, malicious or careless, of some physician upon some other physician's work. As a rule the critic is not in possession of all the facts (one gets mighty few *facts* from a patient!) and when a suit is brought and he learns them, he quite frequently suffers no small discomfort and embarrassment. We, as members of the Society, are safeguarding and defending each other's professional interests against unjust and generally blackmailing assault. Should we not be equally earnest in safeguarding each other's professional good name and so prevent many suits that have no foundation in any actual failure to care for a patient properly? The careless critic who arouses discontent in the patient is more dangerous than the malicious one, for his motives are not so obvious and therefore not so easy to explain. When you feel like commenting adversely on some other doctor's work, just stop and think that the same thing may happen to you. And how would you like it?

PLATFORMS AND HEALTH.

Public health legislation by the federal government was the subject of much discussion at both the Republican and the Democratic conventions. Our dearly beloved Senator Works journeyed to Chicago with a plank in his pocket which he wanted inserted in the Republican platform; but it never came out of his pocket. There was a distinct feeling that it was bad enough for Senator Works to make himself and the Senate ridiculous without plastering any more odium upon the whole Republican party. The Republican platform contains the following plank on public health:

> "It will strive not only in the nation, but in the several states, to enact the necessary legislation to safeguard the public health; to limit effectively the labor of women and children; to protect wage-earners engaged in dangerous occupations; to enact comprehensive and generous workmen's compensation laws in place of the present wasteful and unjust system of employers' liability, and in all possible ways to satisfy the just demand of the people for the study and solution of the complex and constantly changing problems of social welfare."

The Democratic health plank, to which a great deal of opposition was made by the eddyites and the "leaguers," is as follows:

> "We reaffirm our previous declarations advocating the union and strengthening of the various governmental agencies relating to pure foods, quarantine, vital statistics, and human health. Thus united and administered without partiality to or discrimination against any school of medicine or system of healing, they would constitute a single health service, not subordinated to any commercial or financial interests, but devoted exclusively to the conservation of human life and efficiency. Moreover, this health service should co-operate with the health agencies of our various states and cities without interference with their prerogatives, or with the freedom of individuals to employ such medical or hygienic aid as they may see fit."

All of this sounds mighty good, but it is an awfully long way from a plank in a platform to a law passed by congress! We have seen many and various planks that went into a platform as good sound lumber but came out looking like a lot of second hand tooth-picks!

"SHAC."

The pernicious activity of Frederick Stearns & Co., in the matter of their method of exploiting a "patent medicine" headache remedy, was shown up in the *Journal* of the A. M. A. for July 20th. Originally it was advertised as "Stearns Head Ache Cure"; hence the name "shac" which, as it is not a "cure," they were forced to take when the pure food law made extreme falsehood the cause of much unpleasantness. In this country it has become a "remedy"; in England it is still a "cure. The "remedy" or "cure" is nothing more nor less than our old friend acetanilide and caffeine; our dear old friend "antikamnia" and a host of other dear old friend nostrums. But Frederick Stearns & Co., honest and upright pharmaceutical manufacturers appealing to the physicians of this country to use their products, do not wish to be known as at the same time energetically promoting a "patent medicine"—as advertising "shac" in cars, etc. No; they do the dirty business under another name, "The Zymole Company." Why should physicians patronize a concern that does such objectionable business on the side? There are plenty of clean manufacturers that make at least as good pharmaceuticals as Stearns—and *don't* engage in the patent medicine business as well.

MORE NAMES.

The *Annals of Surgery* for July, 1912, comes out as the "American Surgical Association Number." It contains articles by such men as Coley, of New York; Stillman, of San Francisco; Charles Mayo, of Rochester; Willy Meyer, of New York. It also contains advertisements of Fellow's hypophosphites, glycothymoline, glycerine tonic, antiphlogistine, bovinine, salhepatica and pasadyne. The *Annals* is published by the J. B. Lippincott Co. They should be ashamed of themselves; they have money enough to publish the *Annals* without taking the nostrum money they get from these few advertisements. But probably so long as men of the class mentioned will write articles for the *Annals*, the publisher will continue to aid in promoting nostrums.

COLLECTING ACCOUNTS.

Elsewhere in this issue will be found an article by Dr. Kress on the collection plan of the Los Angeles County Association. The "pasters" to which he there refers, and which he says have made every man who uses them his own collection agency, can be recommended very highly. They certainly do get results and they get them without producing offense. The fact that physicians, as a class, are very careless and negligent in the matter of collecting money due them, has been harped upon repeatedly; but that is not to say that they must always remain so; they *may* improve! The physician who conducts the business side of his profession in a thoroughly businesslike way, receives more real respect from his patients than the one who does not; you have very little respect for any one who is "easy to work"; that is just human nature. These pasters will help you a great deal. A set of them can be had by any member merely for the asking. Send to the Secretary, Dr. Philip Mills Jones, 930 Butler Building, San Francisco, for a set of the pasters and try them. The result will surprise you.

TAKING A VACATION?

Are you? If not, you should. Every machine, every piece of mechanism needs an occasional rest. Every human being needs an occasional play time. It is awfully easy to get into the habit of thinking that you cannot find the time. But if you make the effort and do find the time, and get away from the everyday grind, you find out very quickly how easy, in reality, it is to do. You owe your patients a certain amount of play time for yourself, each year, just as much as you owe them a certain amount of time for reading and study to keep up. A tired, "stale" doctor is not a good doctor for a sick person to have, and the only way to keep from getting stale is to get away and play, once in a while.

TUBERCULOSIS SUNDAY.

The idea of having all the churches and religious societies in the country take up the subject of the prevention of tuberculosis on some one specified day, has proved to be a very good one; this year will be the third tuberculosis Sunday. Last year some 50,000 churches took a lively interest in the matter and this year it is estimated that about 100,000 will devote Sunday, October 27th, to the cause of preventing needless deaths as well as to that of saving souls. One would naturally assume that a strong, well, wage-earning church member would be much more desirable than a sickly tuberculotic who may quite possibly become the forced recipient of parochial charity.

EPIDEMIC OF POLIOMYELITIS.

An epidemic of poliomyelitis, or infantile paralysis, broke out in Los Angeles in June; it seems to have been reported first on June 10th. Almost immediately cases were noted in the beach resorts near the city and very rapidly the disease was found in other counties. Cases have occurred in Riverside, Ventura, Merced, Sacramento, San Joaquin, and San Francisco counties. A number of places, notably Pasadena, San Diego and some of the San Joaquin valley points, have either taken steps to quarantine against Los Angeles and that section, or have urged, through their respective health officers, that such measures be taken. In Los Angeles the gravity of the epidemic was at once recognized by Dr. Powers, the health officer, and a special committee was appointed by the mayor to handle the situation. Up to August 11th, 205 cases with 41 deaths were reported in Los Angeles. The death rate is not the most important factor in considering the gravity of such an epidemic, for the disease leaves some 90 per cent. of its victims crippled for life. At first the press, with its stupid policy of suppressing the facts in order not to produce a "scare," was uniformly silent, but about the middle of July items began to be published; later, the press gave all the necessary space to putting out the facts, and papers in Los Angeles, Pasadena, Santa Monica, San Jose, Sacramento, Stockton, Coalinga, Hanford, Merced, Santa Ana, and San Francisco (and possibly other places) have published excellent articles on the subject. In Los Angeles a special appropriation was made and placed at the disposal of the special committee in charge, which committee, and the health officer, were given practically unlimited powers to extend and apply quarantine measures as they might deem necessary. The energy with which the situation was tackled in Los Angeles commands one's respect and admiration and gives emphatic assurance that the epidemic will be under control as soon as it is humanly possible.

The present virulent outbreak of poliomyelitis seems to have originated in 1904, for while cases had been reported, from time to time, previously, the figures were never very large. With the year 1904, however, the number of cases reported in-

creased very rapidly; in 1910 there were over 9000 in the United States. Just how extensive this present epidemic in California will be, or just how great a toll of human life the disease will take, it is, of course, impossible to say; but it probably will not be small.

The following rules, issued by the special committee in Los Angeles, should be urged upon all communities in that section of the state and along lines of easy communication; especially along the coast and in the San Joaquin, Salinas and Sacramento valleys:

1. Avoid having children come together, as in picnics, parties and the like.

2. Keep children at home. Allow them plenty of fresh air and sunshine.

3. Keep yards clean and free from every bit of decaying vegetable or animal matter.

4. Keep the premises watered to lay the dust.

5. Keep the intestinal canals of the children active (almost all infected cases are constipated). Give simple, well cooked, easily digested food and plenty of pure water between meals.

6. Cleanliness of children and houses is important. All fruits and vegetables should be cleaned before eating.

7. Flies should be destroyed, as they carry dirt. Windows and doors should be screened (the city will do this when necessary). A good fly killer is a few drops of formaldehyde in a saucer of water. Flies must drink, and this drink will kill them.

8. Children should not be allowed to become exhausted or overtired. This is especially true of those convalescing from the disease.

9. Children who have been infected should be made to rest. This is important, and should be insisted upon as long as there is any pain in the joints or muscles.

10. Report every sick child to the health department. This is important. The services of physicians and attendants is offered free.

RECENT CONCLUSIONS REGARDING SYPHILIS.

Judging from the discussions at the Seventh International Dermatological Congress (Rome) attended by the writer, and recent visits to various European clinics, the following can be offered as representing the most advanced opinion bearing on the treatment and prognosis of syphilis:

The finding of the treponema pallidum and a positive Wassermann reaction together, even in the absence of other symptoms, is sufficient to establish a diagnosis of syphilis. As an early diagnosis is now possible and as prompt treatment offers the best hope of an absolute cure, the disease can be treated much more effectively than formerly, and in such agents as salvarsan and mercury we have powerful weapons with which to kill off the causative organisms. By injecting salvarsan at the very earliest possible time and by giving mercury later, one can get rid of the greatest number of the treponemata. If the patient appears for treatment after the primary sore has developed, extirpation of the focus effectively eliminates an immense number of the organisms, and several intravenous injections of salvarsan followed by mercury will promptly dispose of those which at that period exist in large numbers in other parts of the body. The single large dose of salvarsan is not being given so much now. The drug is injected intravenously, usually in divided doses at weekly intervals for several weeks, and then followed by mercury. The length of treatment is determined by the Wassermann reaction. It has been observed that relapses are much less frequent when salvarsan and mercury both are administered. Various arsenical preparations are advocated by different workers, but none have proven as effective as salvarsan. Neosalvarsan (Professor Ehrlich's latest modification of the drug) has proven to be fully as active as salvarsan and gives promise of being more valuable. This new drug, which is now on the market, is obtained by the action of formaldehyde-sulphoxylate on salvarsan. It dissolves readily in water with neutral reaction, so that no reagents are required in preparing it for injection. It may be given in larger doses than salvarsan, but with patients having cerebral or meningeal symptoms, small doses should be given at first. Although the solution is very easily prepared, certain precautions must be observed; the distilled water should be freshly made and at the room temperature (20 to 22° C) and the solution must be injected immediately after it is prepared, as it is more unstable than salvarsan. It should not be warmed afterwards. If these rules are not rigidly observed, there is danger of highly toxic products being formed. The Wassermann test made at intervals over a long period, gives the most reliable information concerning the patient's true condition. A positive reaction repeatedly found even in the absence of all other symptoms enables one to recognize the presence of the disease, and no patient can be declared cured without this having been done. Observations of the reaction have shown that in the past many discharged syphilitics have remained uncured. In later years various manifestations probably will appear in such unfortunates. It is well established that the best means of determining the efficiency of treatment is in having this test made.

Pure cultures of the organism have been obtained and animals have been successfully inoculated with the same, but immunization by means of serotherapy has not been accomplished so far. It has been shown that after a cure in animals inoculated with syphilis and in human cases, reinfection is possible and the disease pursues the usual course. Reinfection is readily accomplished also during the first incubation period, but not so readily during the second incubation period. During the latter phase, if reinoculation is successful, usually there is produced a papule, but there may occur a typical sclerosis. In the tertiary period

successful inoculation produces a lesion greatly resembling a gumma. When the system is under the influence of constitutional syphilis (especially in the first year of the disease) the skin is immune to fresh inoculations, unless the inoculated material is exceptionally rich in treponemata, in which event local superinfection can be produced. The three great remedial agents in the treatment of syphilis to-day are salvarsan, mercury and iodine, and although mercury was temporarily displaced, it is gradually returning to its former position.

In the first period of syphilis abortion of the disease seems to be possible; during the second period, a cure is less readily brought about, and in the tertiary period it is doubtful if a cure is ever accomplished, and the best that can be done here is to abolish the symptoms as they appear. Even at this day, when so many thousands have been treated by the new remedies and the treatment checked up by the Wassermann test, no one knows what the future will prove. Relapses are reported more frequently than before. Those cases that were given several large injections of salvarsan and also mercury, so far have shown the most favorable behavior. H. E. ALDERSON.

THE COLLECTION BUREAU PLAN OF THE LOS ANGELES COUNTY MEDICAL ASSOCIATION.*

By GEORGE H. KRESS, M. D., Los Angeles.

About three years ago, the writer of this article corresponded with the three or four county medical associations in the United States which were trying to maintain collection bureaus as part of their activities. This correspondence demonstrated that no matter how splendid a theoretical proposition a collection bureau adjunct of a county medical unit might be, that in practice it was one which could result in a serious financial deficit to a county medical association; as witness the experience of one or two societies that had tried to maintain such bureaus in eastern communities.

For it is to be remembered first, that honest attempts to courteously and yet firmly insist on the payment of overdue bills, especially of bills for professional services in small amounts, in widely scattered portions of the community are by no means carried out without the expenditure of thought, effort and money. And when to this is added the indifference of county society members to cooperate by sending in to such a bureau their good collectible accounts, plus a decided inclination to unload on the bureau a host of virtually outlawed accounts, it can be imagined how small a chance there is to conduct such a doctor's or medical society's collection bureau on a profitable basis.

Profiting, therefore, by the experience of other county societies, we early decided to obligate the Los Angeles County Society in no such manner, contenting ourselves with making a contract with a private collection bureau, but sending to every member by mail a large envelope containing about one hundred follow-up letters and an especially printed booklet containing blanks on which to send names of delinquent clients to the collection bureau, and other memoranda concerning delinquent patients.

The Los Angeles Society Collection Bureau Outfit of 1911 consisted of such a report booklet and five envelopes each containing twenty slips, size, three by five inches. The wording of each of these slips will be found at the end of this article.

The Collection Bureau of 1912 contained the above, plus an envelope in which was enclosed twenty-five gummed slips, on each of which was printed in red ink, seven different "follow-up" notices, the different notices being torn off as needed, along perforated lines. The entire gummed slip measured eight by three inches and each of the seven notices thereon measured one by three inches. There were a total of about three hundred "follow-up slips" or notices in each outfit.

So much for the plan. The important question is as to how it actually worked out in Los Angeles.

That part of the plan which has to do with the collecting agency has not been successful, for the reasons already given as applying to Eastern societies and which two years' experience in Los Angeles has demonstrated, applies also to that city. Physicians there, as elsewhere, seem to prefer dealing with individual collecting agencies rather than with one common bureau; but the other part of the plan and especially the gummed "follow-up slips" to be attached to the bills of delinquents, have done very excellent service. It has been the complaint of the Collection Bureau Manager with whose company we have done business, that we have made every member of the Society his own collector, with these slips, so that only the accounts of the hardened delinquents, as a rule, reached his company.

Judging from the comments of Los Angeles County members it may be stated that our experience with this plan has been very favorable and we believe the State Medical Society would profit tremendously if an outfit of the gummed slips at least, were sent to every member of the State Society every year, say at the same time the State Register was distributed. The cost of printing these slips would be inconsequential and if desired, the Los Angeles County Society would gladly loan its electroplates for this purpose.

In order to bring this matter to the attention of the county medical societies in California, a complete Los Angeles County Society outfit will be sent to the secretary of every county unit, about the time this article is printed, with the request that the attention of the Society be called to these outfits and the plan explained.

The State Councilors will gladly send to all who so request, sets of the gummed slips. All such requests should be sent to the Secretary of

* Written for the Journal of the Medical Society of the State of California at the request of the Board of Councilors of the State Society.

the State Medical Society, Dr. Philip M. Jones, Butler Building, San Francisco.

If sufficient interest is manifested in the plan, such a distribution of gummed slips will be made to all members of the State Society, each year and without cost to them, and it may be possible for the State Councilors to elaborate some other plans related to the above, if sufficient interest and co-operation is shown by the members at large.

Certainly if all the members of the State Medical Society, from one border of the state to the other, would begin to use a uniform system of "following up" delinquent clients, the influence on the community and on the profession could not be otherwise than good.

What is done, however, will depend largely on what the members show they want. If you want some of these slips, write to the State Secretary for them.

SYMPOSIUM ON THE WASSERMANN REACTION AND SALVARSAN TREATMENT IN SYPHILIS.

CONCERNING THE STANDARDIZATION OF REAGENTS FOR THE WASSERMANN TEST.*

By WALTER V. BREM, M. D., Los Angeles.

The value of the Wassermann test is no longer a question open for discussion. Its great value in syphilitic infections as a diagnostic measure, as a guide in the treatment of the disease, and as the only criterion of cure, has been so abundantly proved by competent investigators that the presentation of further statistics regarding the percentages of positive and negative reactions in various clinical conditions and stages of the disease, is but to carry "coals to Newcastle." In other words, the test has already been so carefully scrutinized by able men in the light of clinical phenomena, that clinical reports at variance *with established values obtained by properly conducted tests* demand the exhaustion of at least two lines of investigation before the test itself can be attacked.

1. A critical analysis of the clinical phenomena reported.

2. An examination of the reagents used in the test.

For example, Newmark [1] has recently reported positive Wassermann tests from the serum and cerebrospinal fluid of two patients with tumors of the central nervous system. At autopsy on the body of one of these patients, a "gliosarcoma" of the brain and a carcinoma of the breast were found. At operation upon the other patient an intradural psammona was removed and the patient recovered. In neither instance was there any evidence of syphilis discovered other than the positive Wassermann tests. Waiving a discussion of the possibility of latent syphilis, to which Newmark amply calls attention, the second investigation leads to an examination of the reagents used. Newmark dismisses this subject by saying that "the examinations of the blood-serum and cerebrospinal fluid were made by men whose experience with the method now extends to thousands of cases." It may be true that these men are experienced and careful and that their reagents were ideal. As a clinician not actively familiar with the intricacies of the test, Newmark was perhaps justified in not asking for and incorporating in his paper a detailed account of the technic used and of the titre of the reagents. But those of us who have suffered in the making of the reagents and in their accurate titration, must ask for something more than we were given before we can accept the results. In the light of data that I shall report below, one can see how necessary it is to have detailed information before accepting phenomena at variance with results obtained by able investigators whom we know and have learned to trust. The *Journal of the American Medical Association,* without a consideration of the reagents used in the tests above referred to, attempted in an editorial [2] to account for the non-specific complement-fixations in this and other Wassermann tests by advancing statements of three possibilities. The first possibility, while it must be admitted, seems almost too remote to be seriously considered, and it fails completely when Noguchi's acetone-insoluble fraction of the alcoholic extract of fresh beef-heart is used as an antigen. The second and third possibilities are inadequate as explanations if the tests were properly controlled and the reagents accurately standardized. This brings me to the theme of my paper.

It is my opinion that advance in the use of the Wassermann test is not to be made by further complications of statistics, but by the demand from the medical profession for carefully standardized reagents. It is with the hope of helping to stimulate this demand that I have chosen as my theme to-day, "The Need of Carefully Standardized Reagents in the Wassermann Test," and I may add, of a uniform method of making the test. At the present time there are almost as many so-called Wassermann tests as there are men making them, and as there are different sets of reagents used. It is obvious that this complicates results and brings upon the test undeserved criticism in sections where it is abused.

On one occasion, while my own reagents were being made, I obtained and attempted to use reagents issued from an advertising laboratory that not only offered to furnish reagents to the profession, but also to teach physicians how to do the Wassermann test. The reagents that I obtained were an alcoholic extract of syphilitic liver for antigen and human and sheep-rabbit immune sera for amboceptors. The antigen was so strongly hemolytic that it was useless, and the human-rabbit amboceptor was of such a low titre and poor quality that it also had to be discarded. I had an extremely unsatisfactory correspondence with this laboratory regarding its reagents, and was told that no matter if the antigen was hemolytic, it would work in the test; that patients' sera were

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

likewise hemolytic sometimes, but they also would work in the test. I was told to reheat the amboceptor to restore strength lost by its having been off the ice during transit.

This experience suggested to me the advisability of investigating reagents generally used in making the Wassermann test, and I wrote to other laboratories asking if they sold reagents to the profession, and ordering from each the following reagents:

Alcoholic extract of syphilitic liver.
Noguchi's acetone-insoluble antigen.
Sheep-rabbit amboceptor.
Human-rabbit amboceptor.

I obtained reagents from six laboratories, only one of which advertised or sold them generally to the profession. I bought the reagents from three laboratories, and three very generously and courteously presented me with them. The reagents obtained were:

4 antigens—alcoholic extracts of syphilitic livers.
2 antigens—Noguchi's acetone-insoluble fractions.
4 amboceptors—sheep-rabbit serum.
1 amboceptor—human-rabbit serum.
1 amboceptor—human-rabbit serum dried on paper slips.

These reagents were titrated and the titres compared with the standards required respectively for the Wassermann and the Noguchi tests, and the quantities recommended for use by the laboratories issuing them were considered in the light of the titrations.

ANTIGENS.

1. Alcoholic extract of syphilitic liver. This antigen was not hemolytic and was only slightly anticomplementary in a 1 to 5 dilution. The same quantity of half the strength producing anticomplementary action did not show the slightest power to fix complement in the presence of positive syphilitic serum. The laboratory issuing it recommended its use in a dilution of 1 to 10. The antigen was not serviceable.

2. Alcoholic extract of syphilitic liver. Strongly hemolytic in 1 to 40 dilution, tendency shown toward anticomplementary action, but masked by hemolytic property. More than half the quantity producing complete hemolysis caused incomplete fixation of complement in the presence of positive syphilitic serum. The laboratory issuing this antigen wrote that it could not give the exact titre as it used a drop method of its own. Antigen was not serviceable.

3. Alcoholic extract of syphilitic liver. Slightly hemolytic in 1 to 10 dilution but not anticomplementary. Half the quantity producing faint hemolysis had no power to fix complement in the presence of positive syphilitic serum. The quantity recommended by the laboratory would produce faint hemolysis. The antigen did not come up to the standard for the Wassermann test, and could not be considered serviceable.

4. Alcoholic extract of syphilitic liver. Strongly hemolytic in 1 to 20 dilution, apparently not anticomplementary, but this property may have been masked by the hemolytic action. Half the quantity that just failed to produce hemolysis caused incomplete fixation of the complement in the presence of positive syphilitic serum. The quantity recommended by the issuing laboratory was sufficient to produce complete hemolysis. Antigen not serviceable.

5. Noguchi's acetone-insoluble fraction. Slightly hemolytic in 1 to 10 dilution, but not anticomplementary. One-twentieth of the quantity that produced very faint hemolysis caused incomplete fixation of complement in the presence of positive syphilitic serum. The antigen was not quite up to Noguchi's standard. But owing to the high standard that Noguchi imposes the range of safety is great, and an antigen not coming strictly up to his standard might be serviceable.

6. Noguchi's acetone-insoluble fraction of beef-heart. Not hemolytic or anticomplementary. Complete fixation of complement in less than one-fortieth the quantity used for hemolytic and anticomplementary tests. The antigen had more than twice the antigenic strength required by Noguchi, and was not hemolytic or anticomplementary.

Summary.—Of six antigens obtained from different laboratories, four of them were either too hemolytic or too weakly antigenic to be used in the Wassermann test. All of these were alcoholic extracts of syphilitic livers. One acetone-insoluble antigen was usable, but did not quite meet with Noguchi's requirements. The last antigen, also Noguchi's acetone-insoluble fraction, was most excellent and more than met the high standard set for these antigens.

AMBOCEPTORS.[3]

1. Sheep-rabbit. A 1-1000 dilution caused complete hemolysis with one unit of complement in one hour. The titre given by the laboratory that issued it was 1 to 1000. The amboceptor was good and the titre correctly given. Agar slants inoculated remained sterile.

2. Sheep-rabbit. Titre slightly greater than 1 to 1000. Quantity recommended for the test, 1 capillary drop of a 1 to 30 dilution. This quantity is equivalent to nearly four units of amboceptor, the use of which would obscure weak reactions. One of the other laboratories from which we obtained antigens used the amboceptor furnished by this laboratory. The amboceptor itself was usable, but seemed to be inaccurately titrated. Transplants on agar remained sterile.

3. Sheep-rabbit. Titre slightly greater than 1 to 4000. Titre not given by laboratory which, however, advised reheating "to restore deterioration." Transplants on agar slants showed contamination of the serum with bacteria. The container was closed with a cork stopper, but the amboceptor did not appear to be injured, and was an unusually powerful one.

4. Sheep-rabbit. Titre 1 to 1100. Titre correctly given by laboratory and there was no deterioration in transit from coast to coast. Transplants showed the serum to be sterile.

5. Human-rabbit. Titre less than 1 to 33. The strength was far short of that required by Noguchi; the serum was shipped in a cork-stoppered bottle and was contaminated with bacteria. No titre given by the issuing laboratory.

6. Human-rabbit. The serum was dried on paper slips according to Noguchi's method, and we were directed to use 5 mm. for the test. Five mm. presumably represented, therefore, two units, and 2.5 mm. should have been the titre. It was found, however, that 5 mm. failed to produce complete hemolysis in one hour. The amboceptor was good but was apparently inaccurately titrated. However, it is possible that there was deterioration of the paper slips before it was titrated.

Summary.—Five out of six of the amboceptor sera were of good titre and quite serviceable, but according to my titration only two of four were correctly standardized, and in two instances no information was given by the issuing laboratories. The strength given for the seemingly incorrectly titrated amboceptors was less in one instance than the actual strength, so the disparity was not due to deterioration; in the other instance the strength given was greater than I found it.

The results of the titration of these reagents are astounding if correct. Granting that they are correct, the next question that arises is whether or not the reagents are representative. In answer I would say that they were obtained from two laboratories in the East, three in the Middle West, and one in the West; five of them are well known laboratories and one the private laboratory of a physician. The last was the only one from which I obtained a good and accurately titrated set of reagents. I am obliged to think then that the results represent general conditions.

Fortunately, if reagents are not excessively bad, sera without syphilitic lipotrophic substances (Noguchi) will give a negative test, and sera rich in these substances a positive test. It is with the intermediate group that the difficulty arises, and with this group of sera with poor lipotrophic content the most carefully manufactured and titrated reagents are necessary, and they should be most carefully measured. I feel strongly that much of the loose work that has been done in connection with the Wassermann test has been due to the numerous short cut drop methods now in vogue, and to the abandonment of the more tedious but more accurate method of diluting and measuring the reagents. I believe that only in this latter way can the important quantitative relation between the reagents used be preserved, and the test be brought to the highest point of efficiency. Here I would put in a plea also for the use of only high powered reagents (antigens and amboceptors) in the test, for the reagents must be diluted to such a degree that all extraneous influences must be diluted out and only the specific bodies left in sufficient concentration to act appreciably. Noguchi's antigen, the acetone-insoluble fraction of the alcoholic extract of organs (Noguchi prefers a fresh beef-heart) when properly standardized, is, I believe, far superior to other antigens, because its antigenic value is so great that it can be used in a very dilute emulsion. It thus affords a wider margin of safety and enables one to use a smaller quantity of complement than he would dare to use with other antigens. For a similar reason the sheep-rabbit amboceptor seems preferable to me, and also because a good human-rabbit amboceptor can be obtained only with considerable difficulty. I would advocate, therefore, the use of the Wassermann system as modified by Noguchi; that is, the Wassermann system in which Noguchi's acetone-insoluble antigen is substituted. To offset possible hemolytic bodies for sheep corpuscles in the human sera (which is Noguchi's chief criticism of the Wassermann test), one can use with these high powered reagents, and with carefully controlled tests, a smaller quantity of complement in an extra tube. I have been using for some time such an extra tube in which is placed only one unit of complement, with two parts of the serum to be tested. This tube is run in each test in addition to the usual tubes with two units of complement. At first I was doubtful about my ability to use successfully this tube with only one unit of complement in it, but as time has passed, I have come to depend a great deal upon it, and the interpretation of some of the weaker reactions is made much clearer by its presence. It is of particular use in enhancing the value of a negative test when in it hemolysis is complete. But I feel that it is of value also when a considerable degree of complement fixation occurs in it. In several instances, once in a fading test after salvarsan injection, there has been complete inhibition of hemolysis in this tube, while the complete hemolysis in the other tubes would have indicated a negative test. Our interpretation was that the two parts of serum was just rich enough in lipotrophic substances to fix one unit of complement, and that the unit left free in the tubes in which there were two units was sufficient to cause complete hemolysis and mask the weak reaction. However, I cannot insist too strongly upon the necessity of having high powered, accurately titrated reagents before this sensitive tube can be used with safety.

SUMMARY.

1. The value of properly conducted tests is no longer an open question for discussion, it is proved beyond dispute.

2. When reported results appear to discredit the test, both the clinical phenomena reported and the reagents used must be carefully examined before the test can be attacked.

3. Titrations of reagents obtained from six different laboratories gave the following results:

6 antigens:—
good 2,
bad 4.
6 amboceptors:—
good 5,
bad 1.

The titre of the amboceptors were apparently given erroneously in two instances, not given in two, given accurately in two.

4. Greater care is needed in the manufacture and titration of reagents, and it is believed that the drop method of making the test should be abandoned, and the method of diluting and measuring the reagents resumed.

5. Noguchi's modification of the Wassermann system with the high powered reagents and great dilutions it enables one to use, is thought to be the system of choice.

6. The use of an additional tube containing only one unit of complement is advocated. It can be used only with high powered reagents and in carefully controlled tests, but when carefully guarded may yield information of great importance.

References.

1. Newmark, L.: Jour. A. M. A., 1912, lviii, 11.
2. Jour. A. M. A., 1912, lviii, 37.
3. In the titration of the Sheep-Rabbit amboceptors, the serum of three guinea pigs was pooled and a quantity corresponding to .5cc of a 1 to 10 dilution (i. e. one unit) was used for complement. With the Human-Rabbit amboceptors a slight excess of complement was used, as Noguchi recommends.

PROGRESS IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS.*

By ERNEST DWIGHT CHIPMAN, M. D., San Francisco.

The transitional stage through which syphilology has been passing in recent years makes much of its literature obsolete. This is particularly true of those chapters devoted to etiology, diagnosis and treatment each of which must now be written anew. The particular events which make this necessary are the discovery of a specific causative organism, the development of serological tests and the addition of salvarsan to our therapeutic armamentarium. These were all dramatic events; so much so that, without minimizing their value, it may be pointed out that there exists the danger of other factors which are not unimportant being relegated into comparative obscurity.

The matter of diagnosis has largely passed from a clinical into a laboratory affair and whether the tendency is exaggerated or not is a question which will bear examination. First, however, considering the question of diagnosis as divided into these two departments, let us see what the laboratory does for us.

Of paramount importance is the demonstration of the spirochete for this accomplished the diagnosis is made. The importance of an early positive diagnosis is becoming more and more apparent now that the marked success of early treatment with salvarsan is so well proven. Recent as is the introduction of the dark field condensor as a means of demonstrating the treponema a still newer method is rapidly coming into favor, namely, the staining of smears by India ink. The advantage of this method is its simplicity and the rapidity with which it allows one to establish a diagnosis. It depends upon the fact that bacteria do not take the stain, their presence being indicated by blank spaces in thin smears. Many laboratory workers, however, still prefer the dark field condenser.

While the finding of the treponema establishes a diagnosis beyond doubt the failure to demonstrate it is not proof positive of the absence of the disease. The organism may not be in evidence for several reasons though the subject be infected. These reasons are errors of technic, previous local or constitutional treatment and the age of the lesions as well as sometimes their location. By errors of technic is especially meant the collection of the material which preferably is from a recent lesion, care being taken to get serum from tissue somewhat below the surface. A superficial smear is likely to reveal the presence of the spirocheta refringens which, however, only shows general points of resemblance with the treponema. The demonstration of the specific organism is definitely a laboratory triumph.

A second laboratory aid to diagnosis is the histological examination of tissue. This may be for the detection of the spirocheta by special staining methods, particularly in early lesions or, in later lesions, for the information which the general architecture and the character of the cellular infiltration afford. Syphilitic lesions usually show marked endothelial thickening, numerous plasma cells and chorioplaques as well as a somewhat special arrangement of the cells composing the infiltrate.

The laboratory examination of the cerebro-spinal fluid may prove of value. Aside from serological tests, presently to be referred to, other factors are worthy of consideration. Lumbar puncture may reveal either normal or hypertension. The general appearance of the fluid shows nothing specific. Cytologic examination of the fluid shows marked lymphocytosis and chemical tests show increased globulin which in normal fluid is present in quantities too small to react with ordinary methods. Most American writers apparently attach value to lymphocytosis and increased globulin only when in accord with clinical findings. For example, to quote Strouse, "both increased globulin and lymphocytosis are present in inflammatory conditions of the meninges like tuberculous meningitis, but the clinical history of the latter condition is not likely to be confused with the history of general paralysis, tabes, or cerebral syphilis." According to Gastou, "the presence of an exaggerated lymphocytosis always indicates in syphilis the participation of the nervous system and should make one think of syphilis in any patient in whom it is found."

The inoculation into apes and chimpanzees is well known. Not so commonly known is the fact that in the rabbit, by scarification of the border of the cornea or by the introduction of the spirochete into the anterior chamber of the eye, there results after a month or six weeks a specific parenchymatous keratitis which remains local, not developing subsequent lesions but from which the spirochete is recovered in nearly pure culture.

Although the diagnosis of syphilis by serum agglutination tests is at present not feasible the fact remains that in one case it was accomplished (Zebolotry) by using syphilitic serum acting upon the spirochete contained in the serum escaping

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

from syphilitic lesions on the application of a Bier cupping apparatus.

An additional method is suggested by Nicolas and co-workers, the point of which is that the subcutaneous injection of tuberculin gives a reaction quite as positive in generalized syphilis without tuberculosis as in tuberculosis itself. The conclusion is based upon a series of eleven cases representing every stage of syphilis in activity. One of these cases in the primary stage was negative—whether or not it later became positive was not stated. In ten generalized cases nine were positive. Certain objections to this conclusion are obvious and it may be justly said that the experiments were insufficient. It raises a question, however, worthy of accurate determination if for no other reason than that in some doubtful cases where the diagnoses balance between syphilis and tuberculosis a positive tuberculin reaction may not lead one astray. The same observer had previously attempted a skin reaction with a substance which he called syphiline. This, for the lack of cultures, was made from the liver of a syphilitic fetus. It was in the form of a glycerin extract concentrated by heat to 115° C. The results following its use were doubtful and inasmuch as no reference is made to it in a subsequent article dealing with the use of tuberculin it may be assumed to have been abandoned.

The so-called method of Porges which is based upon a precipitation with glycocholate of soda has been apparently discredited.

Perhaps more promising is the progress of Noguchi with a substance called "luetin" designed to furnish a skin reaction diagnostic of syphilis. This substance is a suspension of spirochetes artificially grown under anerobic conditions in ascitic fluid and ascitic fluid agar to which animal tissue has been added. The results to date in late syphilitic cases, especially treated cases, have been most uniform. In parasyphilitic affections the results have not been so convincing. The difficulty in growing the organism and maintaining sterility is so great that it serves to delay the hope that a satisfactory, ready at hand diagnostic test will be evolved.

Meanwhile there remains as the most practicable laboratory contribution to the diagnosis of syphilis, the Wassermann reaction and its modifications. To keep pace with the literature which has sprung up about this one phase of the subject is a consummate task. Without using time for the discussion of various questions of interest chiefly to laboratory workers, let us come at once to the broader question of the significance of these reactions.

It may at the outset be conceded that the laboratory has had and is having its very definite triumphs in the diagnosis of syphilis, triumphs so impressive that one may not wonder at the temptation to ignore everything else in the making of the diagnosis. There remain, nevertheless, certain words of warning to be spoken. First of all, the reliability of the test is to be considered. Competent syphilographers estimate that fifty per cent. of all serological tests as performed throughout the land are worthless. This opinion is based upon contradictory results reported by different laboratories from identical specimens in many instances. Next is the proper interpretation of the reaction, assuming it to be properly performed. Perhaps the most commonly accepted generalization which can be made concerning the significance of the Wassermann test is that a positive reaction indicates syphilis present, while a negative reaction usually shows syphilis to be latent or absent. It is of great importance, however, that the clinician should make correct interpretation of laboratory reports and square them intelligently with the clinical findings. Every one has seen cases in which syphilis was manifestly present yet which gave negative laboratory reports and, conversely, we have all been given positive findings from the laboratory when our utmost clinical acumen could reveal nothing.

There is nothing in this which vitiates the essential soundness of the serological tests. In making our interpretation we must reckon on a certain percentage of late luetics who do not respond to the test and we must allow for the possibility of error in the laboratory.

Many apparently anomalous instances might be cited. Cases in point are: First, two cases of syphilitic sucklings born of mothers of healthy appearance. The reaction is positive in father, mother and child. The mothers of healthy appearance and coming under Colle's laws are in reality, then, syphilitics without symptoms.

Second, a syphilitic father has positive Wassermann while mother and child give negative Wassermann. The child, however, is ill-nourished and cries without ceasing. Specific treatment is given and immediately the weight curve ascends and the crying stops.

Third, a suckling with pemphigoid lesions and positive Wassermann reaction has parents with negative Wassermann. Inquiry finally elicited the fact that the real father of the child was not the husband of the mother who was the man examined.

The conclusions arrived at by Levaditi and Latapie from an analysis of results of all the tests made at the Pasteur Institute for a period of over three years are that it enables us to ferret out the disease where there are only presumptions; that the positive reactions become more rare the longer the time that has elapsed from the infection and that two factors enter into this modification of the reaction, viz.: the duration of the disease and the fact that it has been treated. In reality these two factors must often be confused, inasmuch as mercurial treatment, in the opinion of competent syphilologists, is only efficacious if often repeated. They believe it premature to say that the significance of the Wassermann reaction is definitely settled concerning the prognosis or definite cure of the patient. If asked for a yes or no answer to the question as to a cure, they declare themselves incapable of answering and affirm that the problem will only be settled when one knows the future of those syphilitics with neither lesions nor

symptoms but with a positive serum reaction, and when one knows if, in the absence of all treatment, or in spite of treatment, they recur sooner or later.

This brings up the consideration of the relation between laboratory and clinical findings. The purpose of such a comparison is not to cavil at or disparage the results of laboratory diagnosis, but rather to warn against a blind acceptance of laboratory reports without due consideration of the possibilities of error or in the face of what yesterday would have been thought incontrovertible clinical evidence to the contrary.

Now the diagnosis of syphilis is a matter of grave importance as, conversely, the establishment of its non-existence would be if that were possible. The danger lies, then, in the fact that, in an excess of enthusiasm, what should be considered as a valuable adjunct is construed as an infallible guide, above and beyond any confusion of test tubes or errors of technic even granting its intrinsic soundness.

As a possible example of the harm which might accrue, let us suppose a patient with a lesion which is easily a close decision between syphilis, tuberculosis and epithelioma. Now the enthusiast feels that a Wassermann reaction will reveal everything. Accordingly it is performed, a positive reaction is reported and salvarsan is immediately injected. A surprise is in store, for there is no improvement in the lesion. Another, and then another injection of salvarsan, reinforced by mercury and iodide, follow, while finally a forlorn hope operation for epithelioma is the result of failure to appreciate the very obvious fact that even in the presence of a positive Wassermann reaction every lesion of the skin is not necessarily syphilitic. So far as is known there is nothing about syphilis which gives immunity to other dermatoses.

Fairly typical is the case of a man who consulted me for lesions of his hands which appeared eczematous. A history of syphilis was elicited, however. On the day of the first consultation he was given local treatment for the eczema and blood was collected for serological test. Upon his return one week later, although he was given a positive Wassermann report, his hands were well.

In a symposium such as this some repetition will be avoided, perhaps, if we confine our remarks on treatment to a few special phases. The old question as to when treatment should be begun is not now debatable. Either the demonstration of spirochetes or a positive Wassermann is a definite indication to proceed regardless of secondary signs.

In the development of specific treatment there is one dangerous tendency we should strive to avoid and that is to consider the case treated when we have used the remedy. Injecting salvarsan when the laboratory report is positive seems so obviously the right thing to do that one is apt to forget the general directions which we owe the patient and which may have such great bearing on his welfare.

Under this head the need should be emphasized for a rigorous hygiene with moderate exercise always avoiding violent exertion. Proper hours, a non-stimulating diet and the exclusion of alcohol and tobacco should be directed. Both physical and mental overwork should be particularly guarded against. In short everything possible should be done to tranquillize the patient from the point of view of the nervous system, the vascular system and the digestive system.

Concerning treatment with salvarsan I purposely refrain from extensive remark as I feel more like listening to the discussion than formulating dogmas. Of a few facts I feel tolerably certain. First of all I agree heartily with Nichols who said in a recent number of the Journal of the A. *M. A.* "There is no room for any doubt that salvarsan is a specific for the spirochetes of syphilis. Whether or not it is a specific for the disease depends, to my mind, simply on the question whether or not the spirochetes are accessible to the drug."

The fact that salvarsan has, without recourse to any adjuvants, effected many cures is of course incontestable. The best possible proof of this are the increasing numbers of reinfections which are constantly being reported after treatment with this remedy. One such case came to my notice at a meeting of the French Dermatological Society last November. The patient, a young man was first observed with a chancre in which spirochetes were found. The blood reaction, at first negative, rapidly became strongly positive. Four injections of salvarsan, .3 gms., were given intravenously at intervals of one week. One month after the fourth injection the blood reaction was negative. In another month he reappeared with a chancre from which, as before, spirochetes were obtained. The blood reaction at this time was negative but in a short time became strongly positive.

The occurrence of exacerbations of nerve symptoms, frequently observed after the administration of salvarsan and by some interpreted as toxic results of arsenic, is I believe really due to the fact that the initial dose has, while killing the free spirochetes, only caused the escape of others from close tissue combinations and therefore far from contraindicating salvarsan really calls strongly for further injections. Nichols explains these neuro-recidives on the ground that the great bulk of spirochetes are killed at one blow and that if any remain they are too few to stimulate the resistance of the body. They begin to multiply, however, after a time, and suddenly flood the tissues again, and, if the brunt of the attack falls on the nervous system, serious consequences may ensue, such as convulsions, deafness, blindness and so forth.

The question as to whether the spirochetes become habituated to mercury and salvarsan seems by experimental evidence to have been answered in the affirmative as regards mercury and in the negative as regards salvarsan. The lesson this teaches is that our modern methods of mercurial administration have not been sufficiently intense and that we would do better to return to the

fashion of our forefathers and give bigger doses even at the risk of losing a few teeth.

There remains a most important consideration, namely the prophylaxis of syphilis. The same decade which has shown such wonderful progress in the diagnosis and treatment of this disease has seen the subject of prophylaxis lagging hopelessly in the rear even in spite of earnest efforts directed toward its advance. A notable contribution to the subject was the publication of a brochure by Bayet of Brussels and Malvos of Liége (La Prophylaxie Sociale de la Syphilis devant les récents progrès de la Syphiligraphie, Bruxelles 1911). In this work the authors, after discussing the subject from many angles, arrive at the following conclusions:

1. By reason of the recent advance in syphilography and the demonstrated efficacy of arsenical preparations in causing the rapid disappearance of the infectious lesions of syphilis, it is necessary radically to modify the defensive social measures against the disease;

2. Above all, therapeutic means must be taken to sterilize the infected subject—the carrier of germs, the direct agent of transmission of the disease in the great majority of cases;

3. To attain this, treatment must be made easily available to the largest possible number of subjects;

4. To this end many centers (laboratories) should be established where physicians may easily have made the necessary examinations for the early and rapid diagnosis of the infection (search for spirochetes, serum-reaction);

5. Evening consultations should be established in hospitals and clinics;

6. There should be obtained the repeal of by-laws in mutual societies and public institutions which refuse medical aid to patients suffering from venereal disease.

7. There should be created anti-syphilitic dispensaries, on the lines of the anti-tubercular dispensaries, where the patient can have free treatment and remain under the observation of his physician during and after his illness;

8. Compulsory attendance of medical students in the clinics for syphilis should be the rule besides post graduate courses to spread among physicians the knowledge of the technic not only of the treatment but of the collection of the materials to be sent to the laboratory.

9. Radical and energetic measures must be taken against charlatanism.

EHRLICH'S 606 IN EUROPE.*

By CHARLES D. LOCKWOOD, M. D., Pasadena.

The material for this paper has been gathered partly from a recent visit to the clinics of Europe and partly from a thorough review of the literature, in which I have been aided by the Nelson Research Bureau.

Since Alt, to whom Ehrlich first entrusted the use of salvarsan, first published his report of fifty cases in March, 1910, a mass of literature, chiefly in German and French, has appeared, giving case reports and general conclusions regarding almost every phase of the use of salvarsan in the treatment of syphilis. Ehrlich estimates that from twenty-five thousand to thirty thousand cases have been treated with salvarsan in the clinics of Europe alone. Wechselmann of Berlin reports fourteen hundred cases from his own clinic, in his recent book.

Notwithstanding the vast amount of experience in the use of salvarsan, its use has hardly advanced beyond the experimental stage. There is a wide difference of opinion in Europe as to the proper dosage, the number of treatments necessary to effect a cure and the methods of administration. The acid solutions at first used for subcutaneous and intramuscular injections have now been largely abandoned in favor of a neutral suspension, an oily suspension or slightly alkaline solution of the drug. The alkaline solution is usually prepared with normal sodium hydroxide and distilled water. Two methods of administration are in common use in Europe, the deep intramuscular injection and the intravenous. The subcutaneous injection is only used as an adjunct to one of the two preceding methods. Although many authorities prefer the intramuscular method, Ehrlich has decided in favor of the intravenous injection of salvarsan, followed by a subcutaneous injection.

The intramuscular injection is characterized by local pain and soreness, lasting from four to ten days, while the chief reaction from the intravenous use of the drug is constitutional, i. e., fever, nausea and general malaise. The symptoms subside within twenty-four hours. There are many variations of opinion as to dosage and time of administration. Lesser recommends small doses of salvarsan (0.1 gm. in oil of sweet almonds) injected once a week until the Wassermann reaction is negative. Spiethoff advises intravenous injection, followed four days later by subcutaneous injection and a month later by a second intravenous injection. Kromayer has the best results with intramuscular injections of 0.2 gm. in paraffin oil, given every other day for six doses and followed by mercurial treatment. Benario advises one maximum dose intravenously followed by mercury, and later by another intravenous injection. The usual dose in most of the European clinics is 0.5 gm. for patients of average vigor. In the strong with malignant lesions, Ehrlich thinks as much as 0.8 gm. may be given with safety in a single dose. The debilitated, and especially those suffering with nervous troubles, should not be given over 0.4 gm. as the initial dose. The larger doses have been found most effective in primary and secondary lesions, while the tertiary manifestations and malignant forms seem to yield best to repeated smaller doses.

As to the therapeutic value of this new treatment, there is an almost unanimously favorable opinion on the part of all men who have tested it clinically. That Ehrlich has attained his object, i. e., therapia sterilans magna, is still an open question, but that he has rendered one of the

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greatest services to humanity is universally admitted. Dr. Zwick in his review of the literature of this subject says: "All reports unanimously attest, as a rule, syphilitic manifestations of every kind and stage are promptly and favorably influenced. Exception to the rapid and favorable action of the new medicament have, however, been noted, but their number is small. The general opinion at the recent important meeting of the scientists at Königsberg appeared to be that 606 had wonderful effect in tertiary and primary syphilis and acted well in secondary; especially active in malignant and advanced cases. Does not affect the eye, large doses cure in one dose in the early stages, permanency yet to be proved."

The relation of the salvarsan treatment to the Wassermann reaction has received a great deal of attention in Europe. Most observers agree that the reaction does not change from positive to negative immediately, nor does this change occur always as soon as the symptoms have disappeared. The reaction may become negative soon after the administration of salvarsan, and again become positive after the immediate sterilizing effect of the arsenic has spent its energy. Repeated doses, however, have been found to render the reaction permanently negative, so far as have been observed in ninety per cent. of cases. As in the use of vaccine, it was essential to determine the opsonic index in a large number of cases before the best methods of administration, the dosage and clinical value of the opsonic index could be estimated, so now every case of syphilis, before receiving salvarsan, should be tested for the Wassermann reaction, and such tests must be made for several months after treatment is discontinued, if we are to arrive at definite conclusions as to the permanency of this new treatment.

As regards the dangers of the salvarsan treatment, a number of fatalities have been reported by European experimenters, but Ehrlich, after a careful analysis of these cases, claims that death could not justly be ascribed to salvarsan except in one instance. In the reported cases, he concludes that death was due to severe lesions which would have resulted fatally without treatment. Ehrlich warns against the use of the drug in cases of serious heart lesion or those showing evidence of degeneration of the nervous system.

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THE ABORTIVE TREATMENT OF SYPHILIS.*

By HOWARD MORROW, M. D., and L. S. SCHMITT, M. D., San Francisco.

As soon as it became evident that salvarsan would not effect a cure in all cases of syphilis, it was logical to turn towards a combination of this drug with mercury to obtain the desired result.

Numerous cures by the use of salvarsan have been reported but many of them will not stand the test of time or close investigation. All of us have seen patients with early manifestations of lues to whom salvarsan has been given, and in whom there has been a return of syphilitic lesions. This is usually seen in patients who have received but one intravenous injection of salvarsan, and seldom occurs when mercury is given in addition.

Nichols (*Jour. Exp. Med.*, 1911, xlv, 201), has shown that in animals the relation of the "curative" to the lethal dose of salvarsan is greater than the difference between the "curative" and lethal dose of mercury.

Our experience with the serum reaction bears out Craig's (*Arch. Int. Med.*, 1911, vii, 395), contention that a negative reaction is obtained quicker and with fewer relapses where mercury is administered in conjunction with salvarsan.

Arning (*Deut. Med. Woch.*, Sept. 28, '11, 1792), reports 71 patients treated with salvarsan (45 with primary syphilis and 26 with secondary syphilis), having no symptoms and a negative serum reaction after eleven months. One patient with a primary in November, who became free of all manifestations and with a negative serum reaction, was reinfected in the following February.

Klausner (*Munich Med. Woch.*, Oct. 31, '11, 2335), reports a reinfection after salvarsan, and Schreiber (*Munich Med. Woch.*, 1911, 893), reports three more cases following similar treatment.

In these cases it can not be controverted that syphilis was aborted by salvarsan alone. Such cases of undoubted early reinfection were unusually rare when mercury was used as the only means of treatment.

In some instances the appearance of constitutional symptoms has been prevented by the use of even a small amount of mercury administered early. But these cases are not numerous and frequently relapse after the mercury is stopped.

Frequently mercury administered for weeks or months after the appearance of the initial sclerosis has failed to prevent the appearance of skin or mucous membrane lesions. It is further true that cases which are not influenced by mercury at once improve by the combined treatment.

That salvarsan alone acts directly on the treponemata is shown in three of our cases (Nos. 4, 5, 6). Numerous treponemata were demonstrated with the dark field condenser before treatment, yet none were found twenty-four hours after the administration of salvarsan. These facts have also been borne out by animal experimentation.

Patients infected with treponema pallida can be divided into two classes. First those with a

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mild infection, strong resistance, or short period of incubation, are easily sterilized by therapeutic measures. And secondly patients in which the treponemata have found their way into localities not so easily reached. To the first class belong those cases in which lues can be the more easily aborted, either by salvarsan alone or combined with mercury.

If by reason of the virulence of the infection, the length of time elapsing before treatment is begun, or a lowered resistance of the patient, the treponemata find their way into the less accessible localities, complete destruction of the treponemata is extremely difficult. Any one who has noted the circumscribed localization of the treponemata and how they apparently seek the denser histological tissue will realize at once the difficulty of destroying them. As examples recall the marked resistance of luetic bone lesions to treatment, and the vigorous therapeutic measures demanded in hereditary lues.

More recently the work of Noguchi with the luetin skin reaction shows the necessity of beginning therapeutic measures early. Therefore early, rapid, and intense treatment is necessary. Rapidity of action is best obtained by salvarsan, and intensity and penetration, by mercury.

Salvarsan acting alone fails to reach the treponemata in the interstitial tissues, while mercury alone by its slower action, allows the treponemata to reach the less vascular areas. Acting together these drugs are able to reach a greater number of treponemata than either one acting alone.

The following is a list of patients with early lues in whom we believe the progress of the disease has been stopped:

We would suggest the following as a general course of procedure in early lues:

Excision of the chancre, if the treponemata are numerous, infiltration dense, and the neighboring glands not markedly enlarged; .45-.6 grams of salvarsan should be given intravenously as soon as the diagnosis is made, and invariably repeated in one week if secondary manifestations have begun to appear. This should be followed by at least one course of mercury given by means of inunctions or injections. The presence or absence of clinical manifestations, together with the serum reaction must decide whether the procedure should be repeated.

The present standard of the so-called cure of syphilis consists of a lapse of one year after cessation of the treatment without clinical manifestations and repeated negative serum reactions.

We feel safe in concluding that in the light of our present knowledge early syphilis can be aborted and that the combined method of treatment will best accomplish this result.

A lapse of years without manifestations, with continued negative serum reactions and the absence of the so-called para-syphilitic conditions will alone prove the present contentions.

	Clinical conditions.	Serum reaction before treatment.	Treatment.	Serum reaction after treatment.	Results.
1 1 M. A. C	Primary of eye-lid. Roseola, Adenopathy.	Positive.	Salvarsan in Apr. and June, 1911.* Followed by mercury.	Negative.	No manifestations. Serum negative.
2 2 F. S.	Early lues with roseola.	Positive.	Salvarsan in April, 1911.	Negative two months later.	No manifestations. Serum reaction remains negative.
3 3 E. M.	Early lues with roseola.	Positive.	Salvarsan in June and August, 1911.	Negative.	No manifestations. Serum reaction remains negative.
4 4 D. P.	Chancre duration 1 week. Treponemata numerous.	Negative.	Salvarsan in June, 1911. Followed by mercury.	Remained negative.	No manifestations developed. Serum reaction remains negative.
5 5 M. R.	Primary of 8 days duration. Many treponemata.	Negative.	Salvarsan in Feb., 1911. Followed by mercury.	Serum positive 10 days after Salvarsan. Negative 24 days after.	No manifestations developed. Serum reaction remains negative.
6 6 O. R.	Chancre of 9 days duration. Many treponemata.	Positive.	Chancre excised. Salvarsan April, 1911.	Became negative May, 1911.	No manifestations developed. Serum remains positive.
7 7 J. G.	Primary of 6 weeks duration. Roseola and adenitis. Treponemata present.	Positive.	Salvarsan in June and Aug., 1911. Followed by mercury.	Reaction negative after second injection.	No manifestations developed. Serum remains negative
8 8 S. H.	Early lues. Papular eruption.	Positive.	Salvarsan in Mar., 1911. Followed by mercury.	Serum negative 7 days later.	No manifestations developed. Serum remains negative.
9 9 H. B.	Primary and early adenitis.	Positive.	Salvarsan in Dec., 1910. Mercury was also given.	Negative 2 mos. later.	No manifestations. Serum remains negative.

SALVARSAN VS. MERCURY.*

By VICTOR VECKI, M. D., San Francisco.

The experience medical science has had with mercury extends over centuries and still we do not know all about what it could do. With salvarsan we are just flirting; and while the literature on the subject has already become enormous, and while some syphilologists have had the occasion to employ the arsenobenzol in a great many cases, the experience of the most emphatic, of the most enthusiastic, and of the most eloquent supporters is limited at least in regard to time.

At present we must listen to the experience of those in whom we have faith, but each of us may be excused if he simply refuses to believe anyone but his own eyes. The results obtained are sometimes so startling that we must also excuse the early Berlin investigators who were such splendid promisers, their experience, however, must guard us against expecting too much.

Without delving into the literature and utterly disregarding other investigators' experiences I shall now simply outline what I was able to learn from the use of salvarsan in my cases.

The number treated by me is only 68, in no case was the injection given more than three times. The results were mostly good. Really excellent, almost startling results were obtained in five cases, little benefit in nine and no benefit at all in six. Out of each of these groups I shall outline one or two characteristic histories.

A saloonkeeper, 40 years old, heavy drinker, paid no attention to his infection until in the 9th week of the disease his mouth and pharynx were in a frightful condition, the patient unable to swallow anything. Then he sobered up because the liquids could not be taken by mouth any more. He was told by a customer of his saloon that he should have a Wassermann made, as that would cure him. The united efforts of the physician and of his wife, who in the meantime had developed a beautiful roseola, succeeded in persuading him that no Wassermann was necessary, and he was given an intravenous injection of salvarsan September 7, 1911, at his home, because he refused to go to a hospital. The result was almost marvelous, the symptoms on penis, skin and fauces were disappearing in a hurry, the man was able to eat on September 9th and hardly a trace of the disease was visible on the 11th. The patient so far, has not resumed heavy drinking, but managed, as the wife reported, to come home once in a while in a somewhat hilarious condition, so he did not become a teetotaler. No Wassermann was made because patient refuses, claiming he is well.

But is he?

His wife, 37 years of age, received so far, an intraveneous injection of salvarsan at the beginning of the treatment, followed by 48 sublimate, 8 calomel injections, and another intraveneous injection of the 606 and still has symptoms of syphilis, slight, but unmistakable clinical symptoms.

A chauffeur, 24 years old, was seen November 4, 1911, with violent secondary symptoms, received an intraveneous salvarsan injection November 7th. This had a rather modest influence upon the cutaneous symptoms, a very good one, however, upon the symptoms in the pharynx. He was then given 9 weekly intramuscular injections of hydrargirum salicylicum, after which the skin cleared. He then neglected his treatment, developed again slight cutaneous symptoms, patches in the mouth, violent headaches, claimed that he had no time for treatment, was given kalium iodatum, but as symptoms did not disappear, found time to take 8 further injections of the salicylate of mercury and is clean at present.

A boy of 20, a Russian Jew, with a typical maculo-papulous syphilid (I emphasize his extraction, because we know that amongst the Russian Jews syphilis is frequently malignant, and mostly tenacious), was given March 5th an intraveneous injection of salvarsan; up to March 12th the syphilid was blooming most beautifully; injections of hydrargirum salicylicum were given, patient is rapidly improving.

A blacksmith, 40 years old, with hardly perceptible symptoms of ten years old syphilis, and a strongly positive Wassermann, was given an intramuscular injection of arsenobenzol April 25, 1910; most disagreeable pains developed on the 5th day after. Patient who went to work three days after the injection, had to return to bed, and was unable to follow his occupation until the 12th day after the injection. August 4, 1911, the Wassermann was still positive (+), and August 5th he was given an intraveneous injection of salvarsan. Patient thought now that he was well and did not return until February 12, 1912, when the Wassermann was $\frac{+}{-}$. February 15th he received another intraveneous injection and March 11th the Wassermann was negative (—).

A waiter, 35 years old, was infected in 1905 and received thorough mercurial treatment at my hands and after our earthquake-fire, by Kreissl of Chicago to whom I referred him. March 20, 1911, he presented himself again with slight cutaneous symptoms, was given May 31, 1911, an intramuscular injection of salvarsan which disabled him from work for 3 weeks, but made all symptoms disappear. November 10th Wassermann was positive (+), 12 daily injections of sublimate were given and 6 weekly injections of salicylate of mercury. Wassermann 3 months later was negative (—).

A clerk, 42 years of age, with a complicated history of luetic troubles of many years, involving various attacks of partial paraplegia, with incontinence, aphasia, spells of stupor and hebetude, and who consulted me in 1904, was restored to usefulness by persistent calomel injections, having worked ever since the early months of 1905, was taken April 29, 1911, suddenly ill again. I saw the patient early in the morning and had him removed at once to the hospital. He was perfectly unconscious and comatose, incontinence of urine and feces, inability to swallow anything. An intra-

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muscular injection of salvarsan was given, the patient knowing nothing about it; 24 hours later he was perfectly conscious and recovered fully in a few days. He is still working. I am sure that in this case nothing but a salvarsan injection would have saved the man.

A working man, 33 years old, covered with a papulo-squamous roseola, was given an intramuscular injection of salvarsan March 21, 1911. Twelve days later the roseola was barely visible, patient was given 8 injections of calomel and 8 injections of the salicylate of mercury. No symptoms since.

A merchant, 42 years old, with a history of syphilitic symptoms for 15 years, treated by Fournier in Paris and many other noted syphilologists in Europe and this country, came to my office March 16th in a most pitiable condition. An enormous gumma of the tongue causing intense and continual pain, inability to swallow, was making life unbearable. The large doses of kalium iodatum he was taking seemed to have no influence. He claimed that he was given a subcutaneous injection of salvarsan four weeks ago, that his tongue improved considerably soon afterwards, but that he would have no more salvarsan injections. His reasons were that the pain caused by the injection lasted for weeks, was worse than that from the gumma, and the improvement in the gumma did not last longer than the pain from the injection.

The patient was placed in a hospital. The first night the pain was so intense that two hypodermic injections of ¼ gr. of morphine brought only temporary relief. Under the influence of aspyrin and local medication the patient improved considerably and having now more confidence, submitted March 24th to an intravenous injection of salvarsan. The next 4 days the gumma seemed to be melting away, the patient became able to take various forms of food, and had very little pain. But on the 6th day after the injection the pain radiating from the gumma into the head became very intense again, and while the gumma itself was constantly improving the cervical glands did not subside and became rather more painful and more sensitive to touch. A second intravenous injection of salvarsan was given April 1st. The healing process in the gumma kept on progressing rapidly, but the cervical glands did not decrease, the patient was in constant pain. April 5th daily injections of sublimate were started. The swelling of the glands began to decrease 48 hours after the first injection and kept on doing so constantly, the pains diminished rapidly, and the patient is at present in a comfortable condition.

While my experience with the remedy may be called limited, I venture to claim the advantage that all cases, with the exception of three, who simply disappeared, were under absolute control and carefully observed, and as personal experience is for everybody the most convincing I take the liberty of drawing the following conclusions:

1. Salvarsan, used cautiously but energetically is a powerful antisyphilitic remedy.

2. The intramuscular injections are more effective and give more lasting results, but are almost impracticable on account of the frequently ensuing pain, and other bad consequences.

3. Salvarsan alone may be able to cure syphilis, it does it, however, in exceptional cases only, and even in those we very seldom can be sure of it.

4. The combination treatment, advocated at present by many investigators, also by Ehrlich himself, will in all probability shorten the time of the necessary treatment.

5. It is very hard to judge of the relative value between salvarsan and mercury. Salvarsan surely has its charms and allurements. But, plainly speaking: if I had to abandon one of the two remedies it surely would not be mercury.

THE FALLIBILITY OF SALVARSAN.*

By LEON JOSEPH ROTH, M. D., Los Angeles.

In considering salvarsan from this point of view, we do not wish to be understood as being in any manner opposed to its judicious use, or not cognizant of its efficiency as a strong therapeutic factor in the treatment of lues. The present prevailing opinion that it is not the sterilisans magna is apparently exact, in spite of the fact that an occasional case is reported as being cured by a single injection.[1] These few cases are substantiated by the reporters as having had a second initial sore after the lapse of from six to twelve months. These reports are not conclusive, because while we acknowledge the possibility of reinfection, the authors have not demonstrated that their cases were followed by the usual secondaries. Also we must recall that years ago Fournier[2] maintained that the spontaneous cure of syphilis was possible; and further, what may seem to be a typical recurrent lesion, may be only a chancre de recidive—a chancriform syphilide appearing usually at the original site of infection, or perhaps elsewhere.

Concerning the vulgar usage of salvarsan we may go to the extreme, and say that on account of its unreliability in producing definite and permanent results, and preventing even early recurrences of symptoms and lesions, it alone is a menace, because it leaves the ignorant and unwarned to exist in a false security, that may lead to their destruction. In spite of this a multitude of administrations are made daily by the regular and irregular practitioner, with the assurance in many cases, that a single injection is sufficient to cause a disappearance of any lesion and the easy conviction of the victim that he is to be entirely and forever cured.

Commercially, salvarsan is a great success. Therapeutically, its value lies in its skilled administration in chosen cases, where no contra indications exist, and lesions or symptoms present that require a rapid, intensive treatment, as a preliminary to subsequent medication by similar substance, and more than likely by mercury.

It is an exceptional instance to find a really curable case that fails to react to appropriate

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mercurial treatment, and by appropriate mercurial treatment, we do not mean merely the use of a few injections of bichloride or salicylate, but a mercurial treatment instituted with preparations sufficiently powerful to produce results, and given in an energetic, and not semi-experimental manner. We frequently see reports wherein is mentioned as a fact that "mercurial therapy failed but salvarsan produced miraculous results." This we do not believe to be absolutely true, because we are convinced that many of these authors do not sufficiently understand this form of mercurial administration and if one preparation or another fails, they are prone to abandon that metal entirely.

The enthusiasm concerning the rapid healing and disappearance of the various syphilitic manifestations is to a great degree unwarranted.

In primary lues the young simple initial lesions do not heal very readily; exceptionally in less, it usually taking from 20 to 25 days to cause their obliteration, and this period will not include the time necessary to cure the more complicated forms, such as those with great induration or phagedenism. Reports are frequently made that a chancre will heal in from 2 to 8 or 10 days. This is true, but the reporters of these cases aparently lose sight of the fact that they have inaugurated a campaign against an already aged lesion.

The tendency of most primary and secondary syphilides is to spontaneous disappearance, the rapidity of which depends upon the character of the lesions; for this reason, even under treatment the time necessary to cure will vary.

As an illustration opposed to a previous statement, one author[3] reports that it required 40 days' time and 5 intravenous injections of salvarsan of .60 gm. each, to cure a chancre of the coronal sulcus; and this lesion was not of recent origin.

The persistence of primary adenopathy is notable, even after plural injections; it frequently taking 3 months and longer for these to disappear; and a curious feature occasionally observed is the development of small painful servical glands following an administration.

Of the secondary syphilides, the ordinary roseola and mucous patches are quickly enough influenced by a single injection, but unfortunately, occasionally rapid in their recurrence. It is not uncommon to see a relapse even as early as the seventh day. The rapidity of effect on the papular rashes depends upon whether they are of the ordinary or hypertrophic forms. The papulo-erosive type is most amenable, and to a slightly less degree are the vegetating and secondary ulcerous varieties. The extraordinary syphilides, such as the papulo-lenticular, the miliary, the lichenoid and psoriasiform of the palmar and plantar surfaces are rebellious to treatment and take 2 or 3 weeks or longer to fade, and frequently require more than one administration.

Pigmentary syphilides of the neck are neither affected nor prevented. Alopecia is not greatly influenced; a satisfactory re-growth of the hair is not usually seen before two months.

Cephalalgia and the ostites disappear with rapidity, but not more quickly than if treated by gray oil; even a single injection suffices, providing adequate doses of potassium iodide are given in conjunction.

The different forms of onyxes are very slow in succumbing; the dry, brittle variety showing the greatest tendency toward recovery.

In precocious malignant lues, the ulcerous lesions co-existing with gumma were cured in from 15 to 20 days, according to Nicolas and Mutot (3a) who consider this a veritable triumph for salvarsan. Five of their seven cases remained healed during the time the patients were under observation; the lesions persisted in the other two. The authors do not state how long.

Generally considering secondary symptoms of the eye, nose and throat, the immediate results of treatment are uniformly good, my informants stating, however, that practically all of their cases were too recent to insure them against the possibility of recurrences, and that the affections of the eye were the least prompt and stable in becoming influenced. In a now rather ancient statistic, Feb., 1911, Stuelp[4] reports a collection of 470 miscellaneous eye cases treated by one injection only, with no results in 35%.

Of the tertiary lesions, the scleroses and leucoplasiae are not modified. Gummatous, ulcero-gummatous and ulcero-crusty manifestations respond to treatment in direct proportion to the extent of their destruction. Potassium iodide, being always indicated, influences to a great extent, the specific action of salvarsan. We have not used this preparation in pulmonary or visceral syphilis, mercury having always responded to the demand made upon it, and for the same reason, we have had no experience in hereditary lues.

Considering the para syphilides—an occasional tabes shows improvement. Among other cases may be mentioned those of Pedersen and Hayden.[5] The latter mentions five cases in which the immediate results were brilliant, but that at the end of a few weeks there were recurrences of symptoms, which subsequent injections did not benefit. In three personal cases, the painful crises (gastric and lightning pains) were relieved in only one instance, in this case an ancient plantar syphilide—porokeratosis—was made to disappear. The other two, with one injection each were in no way improved, and one of these had the most severe crisis in his experience two days after his treatment.

The cases in which ameliorations occur, or in which comparative recoveries are noted, must be studied from a pathologic point of view. Whether these are due to scleroses of the posterior columns, to the development of a low grade of localized spinal meningitis, gumma, or to the various forms of arteritis, remains, of course, unknown. It is reasonable to accept any of the latter causes, knowing of their greater or less susceptibility to

any intensive appropriate anti-syphilitic medication, and reject the former on account of the impossibility of regeneration of central and spinal nervous structure. To illustrate: several years ago we had an avowed syphilitic under observation, who presented the classical symptoms of tabes; he was put under a treatment of proto-iodide pills and iodide of potassium, with the result that all the ataxic symptoms disappeared, and have not returned to this day. In tabetic cases then, salvarsan, or any treatment is indicated only if a positive Wassermann is developed and active syphilitic symptoms exist.

There are no exact results in hemiplegia and paraplegia, and the treatment of paresis is always a failure.

This compilation does not include all of the symptoms and lesions of syphilis; it merely contains certain varieties upon which the action of salvarsan has been accurately demonstrated. Because certain lesions disappear rapidly and treponema are destroyed in a few days, the claim is not warranted that the disease is eradicated.

One of the most energetic French writers [6] states: "We have often noted recurrences after single or plural injections; further, the results of the serum reaction are not constant, and positive reactions are frequently obtained even after three doses of salvarsan. What we may say is that if an intensive treatment is instituted, for instance, three intravenous injections of high dosage, all given wthin a period of 3 to 4 weeks, we have not after 5 months seen any recurrences."

Stoker,[7] reporting 700 intravenous injections, says that the duration of the treatment should be intermittent for 3 or 4 years. Neisser [8] advises that it be continued for months and years, until all syphilitic symptoms disappear permanently, and a permanent negative Wassermann reaction is obtained. He is not prepared to say what is the therapeutic and prognostic value of the Wassermann, and maintains that salvarsan has complicated the treatment of lues.

It does not follow that certain cases may not receive but one injection, and that intramuscularly, and remain free from recurrence even after a year; but we cannot feel secure, considering the vagaries of the serum reaction, in honestly assuring our patients, at least up to the present, that they are free from infection, and permit them to take on such a responsibility as marriage.

What can be hoped for the recipient of salvarsan, if one injection only is considered sufficient in certain cases, and plural injections are necessary in others? In the commerce of medical practice, we would not dare to tell any one private patient that perhaps from 5 to 10 injections may be necessary to cure him. This might do in institutional work, where heroism is more casual than riches.

In résumé then, we agree that arsenobenzol has its field of usefulness, that in certain cases it gives surprisingly good results, that its most potent action is upon lesions in active evolution, and that in some cases it surpasses mercury in rapidity of effect.

But we contend that alone it has not positive curative power, because sufficient time has not elapsed to prove its permanent efficacy; and recurrences of symptoms and lesions seen after one, may well be seen after plural injections. It has not positive abortive action, and further the inconstancy of the sero-reaction makes of it an enigma, the solving of which will perhaps be perceived in the future.

In any case we are not authorized to consider a patient definitely cured. The mercurial treatment, methodic, intermittent and prolonged, should always be instituted after arsenobenzol. Under the existing circumstances, it can neither exclude nor replace the former.

In conclusion we suggest that it is the duty of the profession to enlighten the laity, and protect them by conscientious advice, and truthful facts.

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SALVARSAN IN VARIOUS MEDICAL DISORDERS ASSOCIATED WITH A WASSERMANN REACTION.*

By WILLIAM FITCH CHENEY, M. D., San Francisco.

It is the object of this paper to review the cases seen in the Medical Wards of Lane Hospital between January 1, 1911, and April 1, 1912, where a Wassermann reaction was present and salvarsan was given. For keeping the records of these patients much is due to the assistance of Dr. P. H. Luttrell, to whom acknowledgment is herewith gratefully made. To call these cases visceral syphilis is not altogether accurate, because they include manifestations in structures not correctly defined as viscera; and because even where viscera seemed involved none of these patients came to autopsy to confirm the suspicion. The cases observed and herewith presented number 51 in all; but many of these had salvarsan more than once, so that the total number of injections considerably exceeds this figure.

In classifying these, the largest group, as might be expected, has been that involving the nervous system. In this there have been 23. These neurological cases with Wassermann reaction have been studied especially by Dr. W. F. Schaller, who has taken up their consideration in detail in a separate paper; and they will therefore not be dealt with in this. Suffice it to say that they include affections of all parts of the nervous system—brain, spinal cord and peripheral nerves.

The next largest group has been that where the diagnosis made by patients themselves has been

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rheumatism; of such cases there have been 9. These patients have complained especially of pains in joints, or in bones between joints, or in muscles and fasciae; these pains persisting for months or for years, but usually without visible evidence on examination, of redness or swelling or alteration in contour; though often there was tenderness or stiffness on moving the joints or limb of which complaint was made. In one case there was found a hydrops of the knee, the fluid aspirated as well as the blood from the arm showing the Wassermann reaction. In two cases there was a history of chronic gonorrhea as well as of lues, and the suspicion of gonorrheal arthralgia was strong enough to prompt the use of gonococcic vaccine; but in each case the greater relief seemed to follow the injection of salvarsan. These pseudo-rheumatic patients all claimed to be greatly benefited by the salvarsan; though in several the pains recurred after a variable interval and the injection had to be repeated.

Next in frequency come the cases where the complaint was of stomach trouble. Out of the large number of patients with this story to tell, there were five who gave the Wassermann reaction. In two of these it was possible to demonstrate the existence of tabes dorsalis and to classify the "stomach trouble" as gastric crises. In both of these stomach analysis showed hyperchlorhydria and in one of them a persistent hypersecretion. Salvarsan gave both much relief. Two of the other cases, without evidence of tabes, likewise had hyperchlorhydria to explain their gastric symptoms; while the remaining one was clinically chronic gastritis with subacidity. It is impossible in such cases to conclude, simply because a Wassermann reaction is coincident, that syphilis is the cause of the symptoms; and as salvarsan accomplished no permanent benefit in any of the three, the best proof is afforded that some other cause existed. The chronic gastritis case was given this remedy on November 3rd with no improvement following; again on November 27th with temporary improvement; but in March, 1912, he was back again with all his old symptoms and a triple X Wassermann in spite of his two injections; so a third was given on March 20th. One of the hyperchlorhydria cases had a tender appendix that was probably the source of his dyspepsia. Salvarsan gave him only temporary relief, probably subjective. The other case was not at all relieved by the injection, though the Wassermann reaction subsequently became negative.

Cases of intestinal trouble have been more infrequent and only two have been seen with coincident positive Wassermann reaction. One of these was an obstinate constipation of several months' duration with no discoverable abnormality in abdomen, rectum, stomach contents or feces. After salvarsan he undoubtedly improved in a remarkable way, his bowels moving regularly without laxatives or other aid. The second was a case of dysentery, with pain in the left side of his abdomen and mucus and blood in his stools at intervals for over a year; with visible ulcers just beyond the internal sphincter; no amebae in his feces, nor tubercle bacilli; but a positive Wassermann reaction. After salvarsan his ulcers healed, his symptoms all disappeared and he left the ward perfectly well.

As regards the liver, which is supposed to be a frequent sufferer in chronic syphilitic infection, we have had but two cases where the symptoms and signs pointed to this organ and where the Wassermann was found. One of these presented a rather characteristic history of chronic gall-bladder disease, with recurring attacks of colic and jaundice; after salvarsan, her long-standing symptoms all disappeared, but whether permanently remains to be seen. In the other case, with deep jaundice and a greatly enlarged smooth liver but no pain, salvarsan given twice has so far produced no effect and it seems probable that the disease is malignant, and not explained by the blood reaction for syphilis.

The respiratory system has only twice presented symptoms coincident with Wassermann reaction. One case ill for two months with hoarseness, cough and loss in weight suggested tuberculosis; but the lungs were found normal and the sputum showed no bacilli; while the larynx showed diffuse infiltration of the whole mucous membrane, hyperemia of the cords and the right cord swollen and indurated; and the blood showed a positive Wassermann. After salvarsan there was decided improvement in his voice, his general health and his larynx. The second case complained of chronic cough and expectoration and his chest presented the signs of chronic bronchitis; after one injection of salvarsan his condition improved remarkably in every way, he lost his cough, gained in weight, and his Wassermann reaction became negative.

It is rather surprising that we have seen but two cases of disease of the circulatory system, with coincident Wassermann reaction. One of these presented the clinical picture of general arteriosclerosis with myocarditis and broken compensation. Salvarsan was given him but once and then in half dose, because the condition seemed too critical to warrant more; no effects either good or bad followed, that could be attributed to the injection. The other case was one of aortic regurgitation with broken compensation and extensive dropsy. He was never given salvarsan because too ill to justify it; and his case is therefore not included in the number reported.

Of the remaining cases, various clinical manifestations were associated with the Wassermann reaction; in one an extensive stomatitis and glossitis, cured promptly by one injection; in one, multiple recurrent boils, also much improved after salvarsan; and in two, chronic disturbances of the eyes, with conjunctivitis, iritis and retino-chroiditis, improved but not cured after treatment.

Infectious fever: As syphilis belongs to the group of specific infectious diseases, it is not surprising that at times it presents a fever course and symptoms that make it resemble other more acute infections. In such cases the Wassermann reaction may or may not be of aid in differential diagnosis; for on the one hand it may be absent even though the symptoms are due to syphilis; and on the other, it may be present even though the symptoms are

due to some other coincident infection. In illustration of the difficulties about deciding what a negative or positive Wassermann reaction really means, the great good that salvarsan may do if indicated and the uselessness or even harm in its administration if not indicated, the three following cases have seemed the most interesting of all we have to present, and are therefore described in detail.

Case 1. A man, age 42, a laborer by occupation, was admitted February 24, 1911, complaining of headache and no appetite, for two weeks previous with gradually increasing weakness and loss in weight. He admitted gonorrhea but positively denied syphilis. On admission his skin showed no eruption except slight acne over his back. His throat was reddened, the posterior wall inflamed and covered with mucus but the tonsils were not enlarged and there were no deposits or ulcerations. No abnormality was found in his lungs, heart or abdomen; no enlargement of liver or spleen; no enlarged lymphatic glands; no edema of extremities or scars. His temperature from the beginning was slightly elevated, from 99° to 101°.

Gradually during March he developed enlargement and bogginess of the tonsils, and increased inflammation of the throat, with ulcers on the pharyngeal wall, the pillars of the fauces and both tonsils; all of them covered by a whitish membrane, all raised and irregular and with grandular surface, and all very painful and tender. The laryngeal mucous membrane likewise became infiltrated, edematous and reddened; with several pinhead-sized yellow areas resembling tubercles. During the development of these throat lesions the temperature pursued a low course, at times normal in the morning, rarely rising above 101° in the evening and never above 102°.

But by the beginning of April, coincident with extensive ulcerations and membranous deposit in the throat, the temperature became continuous at a higher level, averaging 101° to 102°, without morning remission and with occasional evening rise to 103° or 104°. The pulse rate likewise gradually rose from normal until it averaged 120. At this time also the patient developed a general skin eruption. The clinical note made on April 3rd says: "Over forehead, cheeks and chin there are numerous discrete papules and pustules and a few macules; the eyelids are reddened, thickened and bathed with a sero-purulent discharge; the ocular conjunctivae are slightly injected; each nostril is reddened and inflamed and partially occluded by purulent discharge; the lips are pale, both are swollen and the lower lip shows several of the maculo-papular lesions seen elsewhere on the face; the breath is very offensive, the tongue heavily coated; the roof of the mouth shows numerous reddened, infiltrated areas, like purpuric spots; the teeth are decayed, several are missing, all show abundant thick deposit at the junction of the gums; both tonsils and the posterior wall of the pharynx are completely covered by a grayish-yellow deposit; the expectoration is profuse, viscid and bloody; cervical glands are moderately enlarged on both sides; over right forearm and arm there are numerous discrete lesions resembling those on the face, except that more of them are macular and on the forearm they are distinctly purpuric in character; over the left forearm and extending half-way between elbow and shoulder there is a diffuse blotchy, purpuric discoloration; between the elbow and shoulder several discrete maculo-papular lesions are seen; the right hand shows numerous macules, and the right wrist is stiff and painful; the left hand is swollen, edematous and the fingers and wrist are likewise stiff and painful, with a few macules found on the dorsum of the hand; over both lower limbs numerous purpuric spots are found, but discrete and scattered and nowhere confluent; no skin lesions are found at this time over the trunk, except a few fine spots in each axilla, no abnormality is found in lungs, heart or abdomen, except that the area of liver dullness measures 14 cm. and that of the spleen 7 cm."

During April the patient's general condition grew steadily worse; his temperature and pulse rate ranged persistently high, and he lost rapidly in weight and vitality. The throat condition showed no improvement. The skin lesions gradually developed into large pustules, thickly scattered over both sides of the face and scalp the ears and neck, both arms, both legs, the back and the upper part of the trunk; they varied in size from a pea to a half dollar; all had thick crusts, "piled up" like the classical rupia.

The effort to identify the nature of this patient's illness caused much investigation by various men in the hospital ward and laboratories. It was clear that he was suffering from some chronic infection, the only question being as to its character. At the outset, diphtheria was the first thought, but this possibility was soon eliminated by cultures from the throat. The next hypothesis was that of streptococcus infection, a theory that seemed to be proven when streptococci grew in the cultures from throat swabs; but anti-streptococcic serum given twice in the latter part of March had no effect, except perhaps to cause some of the purpuric eruption and the joint pains that developed soon afterwards. Tuberculosis of the throat was eliminated by the persistent failure to find tubercle bacilli in the sputum or in swabs from the ulcerated surfaces. Glanders seemed a very likely explanation of the naso-pharyngeal lesions, the fever, the skin eruption and the arthritis; but throat cultures and blood cultures and cultures from the pus underneath the crusts on the skin all failed to show the characteristic organism; injections of guinea pigs were likewise without diagnostic results; the injecton of mallein gave no reaction; and it was thus at last found impossible to verify the suspected diagnosis of glanders.

At the outset and as the case developed, syphilis seemed a most likely explanation of the fever, the throat condition, the tender joints and especially the skin lesions. But the patient insistently denied this possibility; and furthermore, what seemed particularly conclusive, the Wassermann reaction was negative, not only once but on three different occasions during the course of the investigation. Nevertheless, as the patient steadily grew weaker and more emaciated and his death seemed inevitable; and as no other diagnosis had been established as a basis for treatment, it was finally concluded to give salvarsan anyway, on the clinical evidence, in spite of the negative Wassermann reaction. The first dose, .6 gram was administered intravenously on May 15th. Within twenty-four hours the temperature fell from 103° to 99°, and never again went above 100°. The patient at once improved, both subjectively and objectively and in a way that seemed almost magical. The large pustular crusts on the skin dried up and fell away; the mouth and throat became clear; the appetite returned and the patient began to gain in weight. Ten days after salvarsan was given, the blood showed a triple X positive Wassermann reaction, conclusively demonstrating the nature of the infection. On June 20th a second dose of salvarsan was given, although the patient then showed practically no signs of his previous illness and was up and walking about the ward. He left the hospital on August 10th absolutely well, strong and fat and ready to return to work.

Case 2. A man, age 23, a laborer, was admitted to the hospital September 23, 1911, complaining of sore eyes, headache, and pains in his legs. He had a history of gonorrhea two years before and again eight months later; and since the second attack a

chronic gleet, with characteristic "morning drop." One year before he had what was diagnosed as soft chancre, that healed up in one week; without any subsequent rash or sore throat or other evidence of disease.

His present illness began five days before, with inflammation of his eyes and watery discharge. The next day headache began in the temporal regions and he had pains all over his body, but principally in his arms, back and legs. On admission his temperature was 102° and fever persisted thereafter, ranging each day from 100° a. m. to 102° p. m. His eyes showed a conjunctivitis, iritis and irido-cyclitis. His tongue was coated. The glands on each side of the neck, in each submaxillary region and each post-auricular region, were enlarged and palpable. There was no abnormality found in lungs or heart. The liver was slightly enlarged and the area of splenic dullness measured 8 cm. The abdomen was slightly distended and distinct rigidity was found in the right side, with tenderness, in the region of the caecum. The urine showed a light cloud of albumen and many leucocytes, but no casts.

The first question that arose was whether this man's infection was by typhoid bacilli, for which the fever, the headache, the enlarged spleen, the distended abdomen and the tenderness in right iliac fossa all spoke. But on the other hand, typhoid would not explain the inflammation of his eyes or his enlarged glands. On blood examination he was found to have 10,000 leukocytes with 75 per cent. polymorphonuclears; the Widal reaction was negative, and blood cultures were likewise negative.

Measles in the pre-eruptive stage might explain all the symptoms, but it seemed that days enough had elapsed since onset for the eruption to appear; furthermore, no other mucous membranes but those of the eyes were involved.

Smears from the meatus urethrae showed gonococci present and the history indicated the existence of a chronic gonorrhea; from which his eyes might have been infected or even a general sepsis might have arisen.

But the real clue to the nature of the infection was furnished by a triple X Wassermann reaction, indicating an active syphilitic process; and on this theory salvarsan was administered on September 28th, five days after admission. The effect was miraculous. In twelve hours the temperature fell to normal and the fever never recurred. The iritis disappeared; the enlarged glands shrank to normal size; the pains in head and limbs all vanished, and four days after salvarsan was given the patient left the hospital, feeling and appearing in perfect health.

Case 3. It was inevitable that two such brilliant successes should cause over-confidence and so lead to disaster. It followed very shortly. On October 24th, 1911, a man aged 46 was seen at the outpatient clinic with a history that for three or four weeks he had entirely lost his appetite, had lost fifteen pounds in weight, his bowels had been very constipated and he had occasional headaches. He had a definite chancre three years before, followed by symptoms that he had been told were "secondaries"; but he was treated for only five or six weeks, by inunctions and medicine internally. On examination he was found to have a coated tongue; liver and spleen enlarged and palpable; a tender mass in the right side of abdomen over the cecum; palpable epitrochlear glands; marked peripheral arterio-sclerosis; numerous scars and several open, bleeding ulcers on both shins. His blood gave a positive triple X Wassermann reaction on October 26th. On admission to the hospital he was found to have a temperature ranging from 99° to 101° each day. On November 1st he was given salvarsan intravenously, without reaction—no chill, no rise of temperature, no nausea or vomiting. On November 3rd at 4 p. m. he had slight epistaxis; this recurred after midnight and became so profuse that it necessitated packing of the naso-pharynx on the morning of the 4th; even after that persistent oozing continued during the 4th and 5th. On the evening of the 5th he had a copious bloody discharge from the bowel. On the 6th he seemed better and lost no blood; but on the 7th he had several large tarry stools, four in all; on the 8th there were two bloody passages. On the 9th the tarry stools continued; an oozing from the nose recurred; a bloody discharge began from the mucous membranes in mouth and from the gums; and he coughed and expectorated blood. On the 10th bleeding continued from nose, mouth, bronchial mucous membrane and bowel; and on the 11th he had in addition a hemorrhage from one of the ulcers on his leg. This went on until his death at 5 p. m. on the 12th.

As bleeding began and persisted the temperature for the first three days rose slightly, but after that gradually fell; but the pulse rate steadily rose from 100 to 150. As the case progressed the patient became rapidly weakened, with drowsiness most of the time, involuntary bowel movements, labored respirations and occasional delirium. The urine at the outset was normal in quantity and quality; in the out-patient department before admission and in the hospital after admission, for the first week; then it began to show albumen and a large number of granular casts. The blood became rapidly depleted as the hemorrhages went on. On November 8th the hemoglobin was 20 per cent., the red corpuscles 1,250,000, the white corpuscles 4,800; on November 10th the hemoglobin was 18, reds 1,100,000, whites 6,000. The red cells showed all the evidences of rapid anemia, in poikilocytosis, anisocytosis, and polychromatophilia, with the presence of a few nucleated reds. The coagulation time averaged 10½ to 11 minutes.

The medical therapy, besides the local treatment to the naso-pharynx by packs and astringents, included calcium chloride by mouth; horse serum repeatedly, subcutaneously and intravenously; human blood serum intravenously; normal salt solution under the skin, in the bowel by the Murphy drip, and intravenously; tincture of iron by mouth; strychnine hypodermically; gelatin solution by mouth and by bowel. The patient was seen by practically every member of the medical, surgical and rhinological staffs in the hospital, and every suggestion that offered any prospect of relief was faithfully tried; but all without success.

By those who watched this case the bleeding was supposed to be due to the administration of salvarsan and to no other cause. The autopsy, however, showed all the characteristic pathology of typhoid fever; this was the active disease that had caused the symptoms and the Wassermann reaction was only an incident of the earlier luetic infection. It follows that salvarsan was not indicated in this illness, and it seems highly probable that it really contributed to the fatal outcome.

CONCLUSIONS.

First: The finding of evidence of visceral disease plus the finding of a Wassermann reaction does not necessarily mean syphilitic disease of the organ giving the symptoms.

Second: The existence of chronic syphilitic infection, as manifested by a positive Wassermann reaction, does not confer immunity against any other organic or infectious disease; and any disorder may occur with it that may occur without it.

Third: The administration of salvarsan may remove a Wassermann reaction but have no beneficial effect on the patient's symptoms or general condition; in fact, may make him worse instead of better, when these symptoms are really due to some other cause than syphilis.

(The Symposium on Syphilis will be concluded in the October issue.)

ORIGINAL ARTICLES

BARANY'S INVESTIGATION ON LOCALIZATION IN THE CEREBELLUM.*

By KASPAR PISCHEL, M. D., San Francisco.

Though the physiology and the functions of the semicircular canals had been well described by Ewald twenty years ago it was Barany who put the results of these researches to practical use for clinical diagnosis of labyrinth affections. Lately he has gone still further in his research and is trying to solve the question about the functions of the cerebellum. He thinks he has succeeded in localizing the centers for certain movements of the upper extremities. Permit me to cite from a recent address which he has not yet published:

"If in a normal person a horizontal nystagmus to the right has been created either by syringing the left ear with cold water or by turning the patient, with head erect, several times to the left on a revolving chair and stopping him suddenly, there appears besides the nystagmus, a vestibular innervation of almost all voluntary muscles.

"If the patient is asked to walk straight ahead he deviates to the left; in my pointing test he will miss to the left. The pointing test is made as follows: the patient with his eyes closed touches my finger with his index finger. He is then asked to lower his arm and raise it again to my finger. During the nystagmus he will miss to the left. By means of the pointing test it can be proven that the muscles of the head, of the body and of the extremities are all under the vestibular influence. In diseases of the cerebellum (abscesses, tumors, serious meningitis on the surface of the cerebellum) I could demonstrate a lack of these normal pointing reactions.

"In a lesion of that surface of the cerebellum on the right side, which faces the posterior surface of the pyramid, the reaction of the right arm to the left is missing during a nystagmus to the right, while all the other pointing reactions are intact.

"I could prove these facts by the physiological experiment on man.

"The dura of the cerebellum is sometimes exposed in mastoid operations and after the wound is healed it may be covered by a thin skin only, so that the pulsation of the brain can be seen and felt.

"In such cases I could produce a temporary cessation of the reaction to the left of the right arm by cooling the surface just behind the ear. I have made this experiment twenty times with the same result and demonstrated it at several medical meetings."

The one case was that of an eleven-year-old boy on whom a large extradural abscess of the left posterior fossa had been opened. Thin skin only covered the cerebellum. After freezing this part with ethyl-chloride for three minutes the left arm missed in the pointing test to the left and when nystagmus to the left was produced, the left arm did not miss to the right, while the right arm showed typical missing to the right.

"These cases," writes Barany, "prove conclusively that the center for the innervation of the arm for the inward movement is in the outer upper third of the lower surface of the cerebellum." In the neighborhood, farther in front is the center for the movement in the elbow and wrist.

Numerous observations have let Dr. Barany draw the conclusion that the representation of the muscles is arranged in the cerebellum according to joints and direction of movements. Each direction of movement is represented once, every joint and each muscle is represented in one hemisphere at last four times. Each hemisphere is connected with the extremities of the same side. The practical value of this work has been shown in a number of cases. I will cite the following:

The patient was totally blind; when trying to stand upright fell backwards. Ophthalmic examination revealed papillitis in both eyes, nystagmus to the right and left at the end position; when the head is bent to the left rotary nystagmus to the left; when it is bent to the right rotary nystagmus to the right. Drums appeared normal, hearing normal, sensibility normal. By the functional examination of the vestibular apparatus, respectively of the cerebellum according to Barany's method, a tumor of the cerebellum could be excluded. When the right ear was syringed with cold water enormous nystagmus to the left appeared without dizziness. The patient missed with both arms enormously to the right and fell to the right. When the head was turned to the left he fell forward; a similar result was produced by syringing the left ear. He therefore had found that there was a heightened irritability of the vestibular apparatus and the cerebellum but no cessation of the reactions.

A post mortem showed a large gliosarcoma of the left frontal lobe.

Barany's method of examination in this case prevented the wrong diagnosis.

In conclusion I would like to cite from another paper:

"The spontaneous missing may have two foundations, it can be a sign of irritation or a sign of paralysis. The examination of the functions will show the difference; if a patient misses with the right arm to the right, but misses to the left as long as I artificially cause a nystagmus to the right we have to deal with the symptoms of irritation and not of paralysis (right center); but if a patient misses spontaneously to the right and even during an artificial nystagmus to the right still misses to the right we have to deal with paralysis (left center). In the first case the center is irritated, which produces a missing to the right; in the second case the center for missing to the left is paralyzed, therefore the center for the missing to the right predominates. We may imagine that the movement of the arms is controlled by two reins. These two reins represent the cerebellar

*Read before the Eye, Ear, Nose and Throat Section of the San Francisco County Medical Society, May 28th, 1912.

innervation. If they are equally taut there is no missing; but if the right side is drawn more taut we have missing to the right. This would equal a cerebellar irritation of the center for the movement to the right; if the left side is cut the right side will naturally predominate and we have a missing to the right. In the latter case we have to deal with a paralytic symptom of the center of the movement to the left." (From Wiener Medizinische Wochenschrift, No. 34, 1911.)

Discussion.

Dr. H. B. Graham: The pointing symptoms to which Dr. Pischel has referred are simply a portion of a group of symptoms that have been worked on for a good while by a number of men. Probably the most noted is Von Stein. He has not gone into the pointing symptoms especially, but has worked more on the general disturbances of equilibrium—he has worked out the Romberg in connection with the vestibular tract as Barany has the disturbances of pointing, which, of course, belong to this group of general disturbances of equilibrium, whether in feet, body, or legs. Von Stein's work is, I think, most interesting. He has constructed a goniometer by which he measures a person's ability to keep in an erect position during cerebellar affections. He has also worked out the ability of a man to hold his erect position in relation to different colors on the wall. For instance, if one places a man with certain cerebellar disturbances in front of a red wall, he acts differently than when in front of a green, blue, white, black or orange wall. Barany's work on these pointing symptoms of the arm, shoulder, leg, wrist, feet and knee were pretty well worked out when I was in Vienna. The data which Dr. Pischel has given was, I believe, presented in London before the British Medical Association. They are extremely interesting, but at times confusing because, possibly, of inaccuracies in observation and application. I have seen some cases here with Dr. Schaller, which have not worked out entirely satisfactorily. I diagnosed one or two cases as cerebellar affections from errors in pointing, and found that afterward the error disappeared. One or two made changes in these pointing movements which I had not expected. Whether Barany has published anything of that character, I do not know; I have not seen anything. He may be running into some difficulties but is saying nothing about them until they are more completely investigated, as so many who publish discoveries are apt to do. Barany told me he was encountering irregularities, and I have also found these difficulties and have not known how to explain them. Whether actual errors in my acuteness of observation, or whether errors in the principle on which he works, I do not know. Horsley was certainly interested in Barany's work, and a number of his cases were examined by Barany before and after operation, and were correctly diagnosed, which is a strong argument in favor of Dr. Barany's work. The pointing to right and left has been demonstrated by Barany on cases operated for mastoid disease when the posterior fossa was exposed and the cerebellar surface frozen; he found that certain areas governed certain joints, and that errors in pointing were produced by freezing these areas. I would advise anybody interested in this work to take up the subject as a whole and work it out, and not to pay attention to one man's work in contradistinction to all others.

Dr. W. F. Schaller: At the Relief Home there is a case of cerebellar disease in which I mean to try these tests in the near future. In a case of cerebellar lesion (softening) of the left cerebellar hemisphere, which came to autopsy, there was no spontaneous nystagmus or errors in pointing. We have no rotary stool at the Relief Home, and I regret that I delayed until too late to make the examination at the clinic. I believe that this would have been a very instructive case in the light of Barany's tests. A correct diagnosis and localization was made, however, in this instance without their aid.

GENERAL ANESTHESIA IN CATARACT WORK.*

By VARD H. HULEN, M. D., San Francisco.

None of the text-books on ophthalmology give as much space to the discussion of this subject as its importance demands. Some authorities do not mention it at all, now and then a writer may recommend it for more general adoption, others condemn it absolutely excepting in the case of children and adults known to be wholly irresponsible. Concerning its use in these two classes there can, of course, be no difference of opinion. It is interesting to note that one author of broad experience says that he has never done a cataract operation under general anesthesia, while another operator reports having extracted the cataracts from both eyes at one operation under chloroform anesthesia with excellent results in each eye.

The most skillful cataract operator cannot obtain satisfactory results unless he has an obedient patient and reasonable control of the eye during the entire procedure. All of us have had or have seen unsatisfactory eyes following cataract extraction due only to the bad action of the patient at the time of the operation, a considerable loss of vitreous having been sustained or the proper replacement of the iris and a satisfactory "toilet of the eye" having been interfered with.

The operator is to a large extent at the mercy of his patient and, for my part, the anxiety accompanying a cataract operation under local anesthesia cannot be duplicated. When, in addition, the dread and apprehension of the average cataract patient is considered our wonder increases at the large percentage of useful eyes obtained under a local anesthetic. Again, when the operator confidently expects good behavior upon the part of the patient there can be no question as to his preference for local anesthesia in that case, though this confidence may be sadly misplaced. For instance, on October 16th, last year, I extracted a senile cataract from the left eye of a patient whose actions on this occasion were perfect, but when I operated upon her right eye on November 23rd following, under precisely the same condition, my confidence in the good behavior of the patient was unquestioned yet she then proved to be the prize "bad actor," and while the first eye would have been a credit to a master operator the second eye in appearance now would disgrace an awkward tyro.

A satisfactory general anesthetic for cataract work would practically eliminate the personal equation of patients, obviate their mental suffering and abolish the operator's anxiety and apprehension over things he realizes cannot be controlled.

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

Secondly, under general anesthesia the field of operation could be rendered more nearly sterile by the use of copious douching with stronger antiseptics than should now be used under local anesthesia. Thirdly, unavoidable complications arising during the operation could be met more successfully. Fourthly, it is more practical to suture the section under general anesthesia, and I believe a suture to be most desirable especially when the section is large, as must be the case in extraction in capsule by any method.

The disadvantages of a general anesthetic are: first, the danger to life from the anesthetic, but this is now almost negligible; second, the elimination of the good patient's assistance in the control of the eye during the operation, the operator is then only more dependent on an assistant; third, the after effects of the anesthetic in the way of vomiting and general restlessness which may endanger to an extent the integrity of the operated eye. However, after my small experience and upon looking over the statistics of others I wonder if these dangers may not be exaggerted by some authors. Opened sections, prolapsed vitreous, incarcerated iris and intraocular hemorrhage do sometimes follow cataract extractions under local anesthesia. It has not been possible for me to prove these complications more frequent after the use of general anesthesia. Also we may find that a wider experience with a general anesthetic, as for instance, nitrous oxide gas with oxygen, will eliminate very largely the after effects of nausea, vomiting, etc. Former statistics have been based on results following ether or chloroform inhalation.

Valuable information from this contribution may come only from the gathered reports of the members of this section for, as local anesthetics have always been so universally used, individual operators even of large experiences can have had but few extractions under any general anesthetic.

With ether anesthesia I have performed five cataract extractions and beg to refer briefly indeed to the salient points noted.

Case 1. Mrs. B., aet. 45, very nervous patient with extreme myopia since childhood. Vision rapidly failed of late due principally to opacification of posterior capsule of lenses. After the patient was etherized cocaine and epinephrin were instilled. The clear lens with the opaque capsule was extracted from the right eye by my vacuum method without mishap, the manipulations were as easily made as could have been under local anesthesia in a helpful patient. A silk suture was introduced, and although the patient vomited a number of times no complications followed and the result was entirely satisfactory.

Case 2. Frau O., an irresponsible antediluvian with mature cataracts for years in both eyes, was etherized and the right cataract extracted in its capsule by my vacuum method, without assistance or complication. A cat-gut suture was introduced. Neither the ether nor the method of operation could be blamed for the patient's extraordinarily violent conduct for days following the operation, nor was it through any virtue of her own that the patient did not lose the eye completely.

Case 3. Alcoholic male, aet. 47, had a cataract removed from his right eye ten years before under local anesthesia by a very competent operator, but no vision was obtained, the globe was somewhat atrophic. On January 8th under ether I made the usual section in the left eye with a bridge of conjunctiva remaining. While preparing the suture the patient suddenly squeezed his lids and a considerable loss of fluid vitreous resulted. The anesthetic was pushed, a silk suture introduced, the section was then completed and the lens removed by means of the wire loop. The prolapsed iris was excised and a careful toilet of the eye performed. In spite of some vomiting the subsequent healing was uneventful, though no useful vision was obtained. The fault in this case was that the patient was not fully relaxed. Being a difficult subject he had been permitted, through some delay in our preparations, to recover control of his orbicularis at a critical moment. It is extremely important that the anesthetic be profound during the entire operation as this unhappy experience teaches.

Case 4. A monocular patient whose eye it was impossible to affect by local anesthetics, as had been proved through an effort to do a preliminary iridectomy some weeks previously, was etherized and the cataract extracted with the loop after failure to deliver it by my vacuum method. The cup did not hold probably because its edge was allowed to rest on a small blood clot across the pupil. The usual silk suture was introduced. There was some vomiting for two days but no complications ensued from the anesthetic.

Case 5. Spanish woman 60 years of age had mature cataracts in both eyes. It was thought best, as she did not speak English, to use a general anesthetic for the operation on the first eye. April 2, 1912, the cataract was extracted in its capsule by my vacuum method with perfect smoothness in technic and result good so far. The silk suture was allowed to remain a week. There was no difficulty in its removal nor has there been in any of the cases. I have yet to see harmful irritation from the presence of a suture.

From my experience in the above five cases, with a few seen in the practices of others and from having observed a large number, comparatively speaking, of cataract extractions under general anesthesia (usually chloroform preceded by nitrous oxide gas) during three protracted visits to the Royal London Ophthalmic Hospital, where such operations have been frequent, I am encouraged to hope for an increased field in the use of general anesthesia, especially so if some other anesthetic may reduce or eliminate the disadvantages of ether or chloroform. For in cataract work, *everything else being equal,* both the patient and the operator would seem to have a better chance with general anesthesia to obtain useful and permanent vision.

Discussion.

Dr. W. S. Franklin, San Francisco: Dr. Hulen's paper is certainly an extremely interesting one. A large proportion of our patients are very old and feeble and you are going to get complications if you use general anesthesia. General anesthesia unfortunately has a tendency to make the eyes turn upwards and outwards necessitating pulling with fixation forceps, which increases the intra-ocular tension. Citing four or five cases is not sufficient; it would be necessary to have at least 1000 cases in order to compare the results of local and general anesthesia. With those patients operated under general anesthesia you have vomiting, marked increase in the blood pressure, face flushed, conjunctiva red and hyperemic and there is no question of the tremendous increase of blood pressure. I feel that it must be limited to such special cases as heretofore.

Dr. Kaspar Pischel, San Francisco: For suture

I would suggest the use of rat tail tendons, which are fine and strong; they will be absorbed in about a week. The speaker mentions as one of the advantages of general anesthesia the possible use of stronger antiseptics; I do not think that this is a good reason. In local anesthesia we can use local antiseptics as strong as we dare, but I do not consider it advantageous to use strong antiseptics in cataract operations; they are too irritating. The help of the well trained patient during local anesthesia is a decided advantage. I have made it a practice to have the patient trained to look down on command without pressing. Of course there are patients who cannot be trained. In these exceptional cases general anesthesia has to be resorted to. On my recent European trip I found the operation under local anesthesia the method of choice everywhere.

Dr. P. de Obarrio, San Francisco: One is generally likely to have a tendency to write on such subjects as one has lately had trouble with. As a matter of fact the question of general anesthesia as regarding the extraction of cataracts is a question of daily bread. In Panama I was placed in touch for many years with general surgical work and such special cases that came for treatment in the hospital were operated in the general operating room, and the cases of cataract operation that were nervous or very restless were submitted to general anesthesia as a matter of routine. I am not an advocate of general anesthesia as a routine treatment for cataract extractions except in well selected cases. The less one handles an eye as regards cataract extraction the better are the results. After operating an eye for a cataract operation, if you let the case rest absolutely for 6 or 7 days it is a revelation when you remove the bandage and find hardly any reaction on such an eye and the cure is uninterrupted. In giving general anesthesia there is always the possibility of vomiting, of bronchitis, broncho-pneumonia and death that has to be taken into consideration with the old patients. One hears of the favorable statistics of general anesthesia and that there is but a death or so among these cases from the use of ether in several thousands. The deaths thus referred to are only those which have taken place on the operating table and we do not hear of the deaths that occur from bronchitis and broncho-pneumonia or nephritis after they have been moved to the general ward. Regarding the use of sutures, whether you use silk or catgut or any other material it makes little difference; but it should be a material that is soft and pliable under the lid and that it will absorb moisture. There is no question as to the greater advantage of the conjunctival suture as against the corneal suture, when such a suture is indicated.

Dr. Wm. F. Blake, San Francisco: I have lately been using nitrous oxide and oxygen as an anesthetic where general narcosis was necessary in eye operation. During the past two months I have used this anesthetic in four cataract cases and in a case of iridectomy for glaucoma. To my mind nitrous oxide and oxygen is the most satisfactory anesthetic we can use. The preliminary dose of scopolamin quiets the patient and he comes to the table free from doubt and fear which is a very present factor in the handling of most cataract cases. The anesthetic itself seems free of any injurious after effects. The only possible objection is that the gas produces some cyanosis and heightening of the blood pressure during the time of anesthesia and for a period following. In my cases I have had the blood pressure taken before the patient went to operation and again immediately afterward and as a rule have found a rise in pressure of from five to fifteen m.m. So far, I have not seen any other objections to the use of this form of anesthesia. Following its use there has not been the least sign of nausea and when the patient awakes he expresses himself as feeling as if he had just come out of a quiet sleep.

Dr. Louis C. Deane, San Francisco: I had the pleasure of assisting Dr. Hulen with the first case which he reports in his paper. There was a heavy deposit on the posterior capsule and high myopia. It seemed a good test for his suction removal of the lens in capsule.

On the morning of the operation the patient was found in a highly nervous state and the doctor hesitated as to the advisability of operating in this condition under local anesthesia. It was then that we decided upon a general anesthetic. Ether was given with no previous preparation and with a very satisfactory outcome.

In the past I have used general anesthetic for iridectomy in glaucoma, where cocaine was poorly absorbed on account of intra-ocular pressure, and twice for cataract previous to this case. Neither of these cases encouraged me to make a practice of it. I believe my feeling was largely due to the poor administration of the anesthetic. As we are now inclining toward the trained anesthetist, and with my experience in Dr. Hulen's case and of my own since, I feel that the use of a general anesthetic is advisable in certain cases of ungovernable patients. I can readily see why Dr. Hulen inclines toward the general anesthetic because the question of time in operating is eliminated allowing him to stitch his conjunctival flap, which is an excellent procedure as a safeguard against certain sequelae. With such a stitched corneal flap the dangers incident to vomiting from a general anesthetic are greatly lessened.

Dr. C. S. G. Nagel, San Francisco: I believe that general anesthesia in cataract extraction should be done in selected cases and the discussion which this paper opens up is a decidedly meritorious one. It strikes me that if a man would look carefully through the literature that it might help to decide the question when to use general anesthesia. I understand that general anesthesia was used largely in Europe in cataract work before cocaine was used. A few cases are not enough upon which to really reach final conclusions in such a question as this one. A short time ago I operated upon a deaf mute woman for cataract and the result was brilliant and the operation passed off so easily that I came to the conclusion that it was the general anesthesia that had contributed to the ease and success of this case. A short time afterwards I decided to extract a cataract in an alcoholic who had slight myopia. In this case the vitreous presented itself readily and I had to take the lens out with a loop. My impression that I was inclined to harbor a few weeks previously as a result of the first case that passivity of the patient was a decided help, was done away with in this latter case to that extent that I thought in a normal vitreous at least the tendon would have remained higher under cocaine and thereby the presentation of the vitreous would not happen so readily since lens would come out with less outward pressure.

Dr. Vard H. Hulen, San Francisco: I hope the members of this Section will not think that I am advocating the universal adoption of general anesthesia in extraction of cataract. I only want to suggest the possibility that we are more afraid of the disadvantages of the general anesthesia than we should be. It would be absurd to think that my experience in these few cases means much more than that an operator may have 5 cases without bad results following the use of a general anesthetic.

The statistics of Major Smith in his enormous number of cataract extractions in India in which he uses comparatively strong bichloride solutions show that his infections are exceedingly few. American patients would find copious douching of

their eyes with bichloride solution just before an operation under local anesthesia unpleasant and would be detrimental to their subsequent behavior, this would not apply when a general anesthetic is used and I believe, from Major Smith's experience, that free douching is undoubtedly advantageous.

With the general anesthetic I also use cocaine and adrenalin solutions. Cocaine has a tendency to lower the tension of the eye. In the New York Eye Infirmary it was the custom to instill after the extraction a 10% solution of cocaine with that idea in view. The control of the eye under a general anesthetic is not difficult provided the anesthesia is profound. Regarding the sutures, I have had some experience with catgut in the conjunctiva that was not favorable. In the cases that I have done so far I have never had trouble with the silk sutures though the removal of sutures in cataract cases is a very delicate manipulation.

RADIOLOGICAL INVESTIGATION OF THE DISEASES OF THE STOMACH.*

By C. M. COOPER, M. B., and G. L. PAINTER, M. D., San Francisco.

The introduction into medicine of the bismuth test meal whether due to Rieder or Courmelles forms a landmark in the progress of the study of diseases of the stomach, the importance of which even to-day is recognized in only a few clinics.

The test meal may consist of boiled rice, potato puree, barley broth or minced meat according to the desires of the patient, the amount for an adult is 400 grammes by weight. Two ounces of bismuth subcarbonate or bismuth oxychloride are rubbed up into a thin paste with water or milk, and the food added little by little to the bismuth suspension with which it is well mixed. The meal can be flavored with sugar of milk or raspberry juice. It should be served warm.

In many instances the facilities for the preparation of such a meal are lacking. A pint of kefir or koumyss milk with which two ounces of the bismuth salt is well mixed forms an excellent substitute. As Pfahler has shown the bismuth salt remains well suspended. The quantity mentioned is sufficient to render visible every part of the normal stomach.

Though the bismuth meal may cause some distortion, and may perhaps interfere with the normal gastric physiology, thus giving no absolute values, yet if always of the same weight and viscosity, it yields results that are directly-uniformly comparable.

This meal like the Ewald test meal is best administered in the morning when the stomach is empty.

Two radiograms should be made, one immediately subsequent to the taking of the meal, the other four hours afterwards by which time this bismuth meal should have left the stomach. If preferred the double test meal method of Haudek may be employed, the second test meal being given six hours after the first. At the time of taking this second meal a part of the first should have reached the hepatic flexure.

Lead markers should be placed, one over the umbilicus, another over the sterno-xiphoid junction. The patient may be clad in a thin undervest, and since the main work of the stomach is done with the body in the upright posture the X-Ray investigation should be made with the body erect, the abdomen facing the plate.

The target of the X-Ray tube should be at a uniform distance (60 cm.) from the plate, and the incident perpendicular ray should pass through the lower marker.

The time of exposure depends upon the particular apparatus that is used to energize the tube, the more powerful the apparatus the shorter the exposure, and the cleaner cut the shadow images. However, excellent work can be done with the coils that have been in use for some years, especially with the aid of the newer intensifying screens.

The plates obtained must be satisfactory, i. e., the shadow of the bismuth meal should be quite white and plainly visible, the shadows of the markers should be clean cut. If the shadows be indefinite or blurred the work should be re-done.

Before attempting to interpret the plate the clinician must be familiar with the picture of the normal bismuth-containing stomach, which exhibits the following characteristics:

The shape of the shadow so obtained is best likened to that of a fish-hook or syphon, it presenting a descending, transverse and an ascending portion. Occupying the upper pole of the descending portion and therefore immediately under the inner part of the left diaphragm is the stomach air content, the so-called megenblase or stomach bubble, containing merely air it is highly transradiant. It is convex above and bounded below by a straight line which marks the upper boundary of the dense shadow thrown by the contained bismuth meal. The upper portion of this latter shadow is not uncommonly less dense than the main shadow, this lessened density being in some cases perhaps due to the collection of gastric secretion above the level of the test meal, and it has been suggested that the vertical extent of this intermediate zone may indicate in a rough way the secretory activity of the stomach. With the Koumyss meal the froth may exhibit a characteristic appearance above the level of the liquid.

The descending portion runs downwards and inwards slightly narrowing just below the stomach bubble, this narrowing having been termed by Rieder after His the *incisura cardiaca.* Again widening a little it journeys downwards and inwards and becomes continuous with the mesially placed transverse portion or stomach sac as this has been named by Grodel.

From the stomach sac the ascending portion runs upwards and slightly to the right, the shadow of the bismuth meal ending at the pylorus which is frequently represented by a shadow-free space of about a finger's breadth separating the shadow due to the gastric contents from the shadow due to a portion of the meal which has already found its way into the first part of the duodenum.

In the ascending portion near the stomach sac a slight constriction is not infrequently to be seen.

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912

This represents the position of the sphincter antri, and the portion of the shadow between this constriction and the pyloric ring represents the contents of the antrum. The segment where the ascending and descending portion join is, according to this description, the stomach sac, and the angle of junction has been termed the stomach angle.

The fundus lies in contact with the inner two-thirds of the left diaphragmatic arch. The cardiac end of the stomach is on the right side of the body of the tenth or eleventh dorsal vertebra, it is the most fixed point of the stomach.

The descending portion of the stomach lies to the left of the vertebral column, its inner border lying close and almost parallel to it. The stomach sac is situated almost medially, exhibiting about its center the shadow of the marker placed on the umbilicus. Its lower border reaches as low as the disc between the third and fourth lumbar vertebrae.

The pyloric ring is situated on a level with the first or second lumbar vertebra laterally a little to the right of the middle line.

The size of the shadow. The test meal as advised fills the normal stomach to above the level of the incisura cardiaca, and the different parts of the shadow occupy the anatomical areas described. Commonly the descending portion is not over a hand's breadth in width, and the ascending portion three to four finger's breadth.

The contour of its border. This is normally regular and clean cut, there occurring no ragged margins, no steep and marked incurvations except at the sphincter antri and no cup-like depressions. The slight narrowing at the incisura cardiaca has been alluded to. Sometimes when the exposure is a very quick one the stomach shadow registers the peristaltic contraction, the outline of the greater curvature presenting a wave-like appearance. The angle where the descending portion of the lesser curvature becomes continuous with the ascending is normally a blunt one, and owing to the obliquity of the stomach the angle may sometimes appear sharp when really blunt.

The uniformity of the shadow. The density of the bismuth shadow below the level of the intermediate layer is uniform if the bismuth salt be thoroughly suspended in the mixture.

If instead of the usual bismuth test meal half or double the quantity be administered, the outline of the normal stomach maintains its fundamental form unchanged. The shadow obtained reaches to the same height as that thrown by the standard meal, its individual parts varying only in breadth. This is due to the so-called peristolic function which enables it to closely embrace its contents.

If the radiogram be made with the patient prone instead of erect, the form and position of the stomach shadow is markedly different from that described. The whole shadow is now well above the level of the umbilicus. It is somewhat horn-shaped in appearance, the pylorus now representing its most caudal point.

FLUOROSCOPY OF THE BISMUTH MEAL-CONTAINING STOMACH.

The shadow picture exhibited on the fluoroscope is, of course, an exact replica of that thrown on the plate, though the details of its outline are not so clearly seen. The use of the screen, however, enables us to recognize readily other features which are of considerable importance.

a. During respiration the gastric shadow is seen to move downwards as the diaphragm descends, upwards as it ascends. If during fluoroscopic inspection the patient be asked to contract his abdominal muscles thus drawing in the abdomen, or if the abdomen be pushed in the shadow is seen to be raised a hand's breadth, though the position of the pylorus is little changed.

b. If one pushes a finger into the shadow mass either at its margin or into its surface, one can displace the bismuth meal from the spot indented and a bright area becomes apparent.

c. If one watches closely one can see the characteristic gastric peristaltic waves. They begin in the descending limb of the stomach, are to be seen traveling along the curvatures and cease at the sphincter antri, there leading to the concentric constriction previously spoken of. Contractions of the antrum itself then occur. These continue till the antrum is emptied, the contents passing through the pylorus or back into the proximal part of the stomach. The antrum is again formed and the whole procedure recurs, one revolution occurring about every twenty-one seconds.

d. If one kneads the shadow mass against the vertebral column the peristaltic waves become more brisk, and the contents of the antrum are massaged on into the duodenum.

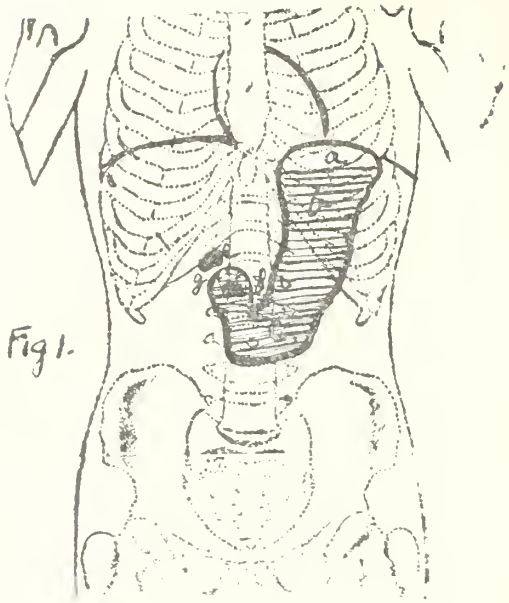
VARIATIONS IN GASTRIC TONICITY.

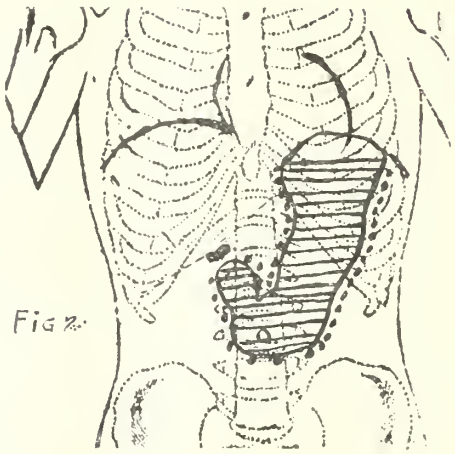
The form of the shadow which has been described as that of the normal, presupposes and is dependent upon, a normal tonicity of the gastric walls. But the gastric tonus may be of different degrees even in individuals who present no gastric symptoms. Thus, according to Schlesinger, we have the hypertonic stomach, the orthotonic stomach, the hypotonic stomach and the atonic stomach, either of which may exist with or without actual organic gastric disease.

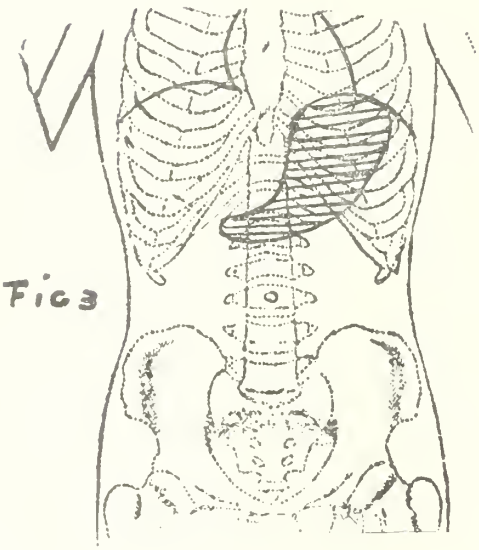
The shadow of the bismuth meal-containing hypertonic stomach as registered in the erect posture is shaped like a steer's horn, the pylorus representing its deepest point. The fish-hook form of stomach becomes, as we have already seen, somewhat like a steer's horn when the patient is prone. Holznecht firstly described this type and considers that in man as distinct from woman it represents the normal, but such a shape if obtained in the erect posture is significant of increased gastric tonicity; the emptying time of such a hypertonic stomach is from two to three hours.

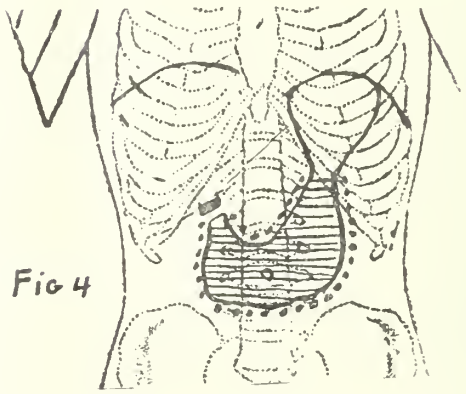
The characteristics of the shadow of the orthotonic stomach have been described in full.

The shadow of the hypotonic stomach has a widened stomach sac and ascending limb, whilst the descending portion is lengthened and narrowed, the









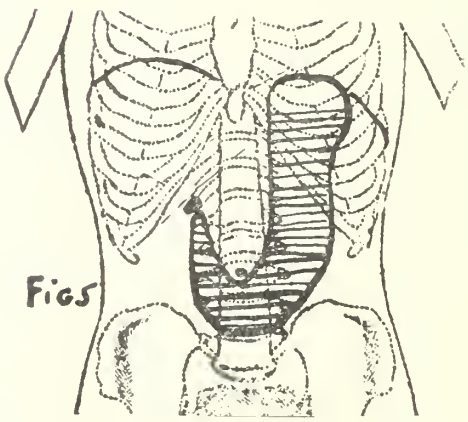


Figure 1—Normal stomach—a, magenblase; b, descending part; c, stomach sac; d, antrum of stomach; e, duodenum; f, stomach angle; g, pyloric ring.

Figure 2—The continuous line represents the outline of the bismuth-meal containing normal stomach. The dotted line, the outline after a double test meal.

Figure 3—The normal stomach with the patient lying down. Note its shape and the absence of a magenblase.

Figure 4—Atonic pseudo-hourglass stomach. Continuous line represents outline after bismuth test meal. Dotted line outline after double test meal.

Figure 5—Gastroptosis. Pylorus in position. Normal tonicity.

bismuth content, however, rising above the narrowed portion. The upper limit of the shadow is flat, the stomach bubble somewhat rectangular in shape. It empties in from four to six hours.

The shadow of the atonic stomach has its stomach sac and ascending limb still further widened, whilst the descending portion is still more thinned and narrowed. The shadow of the bismuth meal does not extend up beyond the narrowed area, and the stomach bubble is funnel-shaped. Such a stomach empties in about six hours. A double bismuth meal leads only to a widening of the shadow as described, and not to any marked additional height of the bismuth shadow.

The peristaltic and peristolic functions of the gastric muscle are independent of each other just as the similar properties of the heart muscle are.

Gastroptosis. In gastroptosis both limbs of the gastric shadow are lengthened and narrowed whilst the pylorus is normally situated. The lesser curvature is much too low, perhaps below the normal position of the navel. With this the peristolic function or gastric tonus is well maintained, perhaps even excessive, for the bismuth shadow extends abnormally high in the descending limb, and the stomach bubble is small and round. Groedel suggests that this gastroptopic stomach is really primarily due to a descent of the transverse colon which instead of serving as a gastric cushion now adds to the stomach load.

On the other hand most stomachs with diminished tonus exhibit some degree of gastroptosis, and the loss of tonus in its turn may occur in gastroptosed organs.

Pyloroptosis. In pyloroptosis there is some degree of dropping of the pylorus, and the descending part of the stomach is elongated and narrowed. This may be only part of a general enteroptosis, on the other hand the liver may have maintained its normal position, the dropped pylorus then indicating a lax gastro-hepatic omentum.

Even with a considerable pyloroptosis if the radiogram has been made with the patient prone the pylorus might appear to be normally situated. Such a postural change in the position of the pylorus is characteristic of pyloroptosis, and shows that no adhesions are present fixing the pylorus in its abnormal position. A similar change in the position of the pylorus occurs when the abdomen is voluntarily drawn in or pushed in by the examiner.

The tonus of the pyloroptotic stomach may be high, normal or low, leading to the associated characteristic variations in the fiilling of the descending limb, in the size of the stomach bubble, and in the emptying time of the stomach. Groedel believes that pyloroptosis may sometimes result from diminished support to and increased weighting of the stomach, it representing a later stage of gastroptosis.

Abnormalities of secretion. Hypersecretion according to Schlesinger is suggested by an increased breadth of the intermediate zone of the gastric shadow.

Achylia leads to insufficiency of the pylorus, so that the emptying time of the stomach is considerably reduced, the bismuth meal all leaving the stomach in two hours or less.

In neurasthenics and hysterics who complain of gastric symptoms due to functional disturbances, the radiological examination commonly shows no departure from the normal; sometimes however in young people there is an associated hypertonicity and hypermotility. The shadow is then horn shaped, the antrim is smaller than usual and the emptying time somewhat hastened.

The diseases of other systems (tabes, Addison's disease, phthisis, brain tumor) which present in their course gastric symptoms are associated with a radiologically normal stomach, a finding which is of considerable aid in correctly interpreting the sometimes puzzling picture.

Pathological lesions in the neighborhood of the stomach, but of non-gastric origin, sometimes imitate gastric diseases. A tumor may be readily palpable, and be clinically apparently of gastric origin, but radiology may show that the tumor is outside the area of the stomach shadow, or becomes outside when the abdomen is retracted. If it indents the stomach shadow the indentation is smooth and clean cut. Splenic tumors displace to the right the cardiac end of the stomach. Left renal tumors similarly displace the stomach sac and antrum.

A painful and tender area may be present in the upper abdomen and be associated with some muscular rigidity; radiology will show whether or not this point lies within the area of the stomach, a very helpful point in diagnostic work.

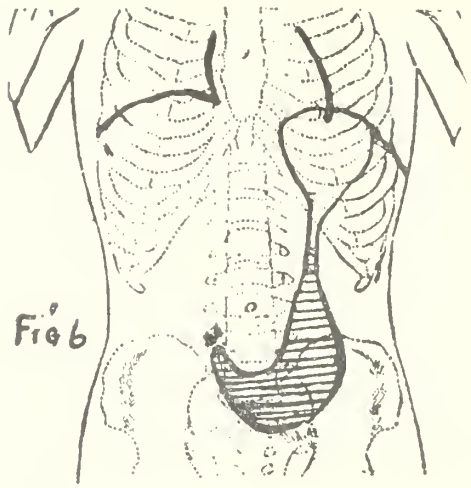
Gall bladder and appendix dyspepsia unassociated with gastric changes show radiologically either no departure from the normal or a hypertonic form of stomach shadow. The sensitive point is extra ventricular.

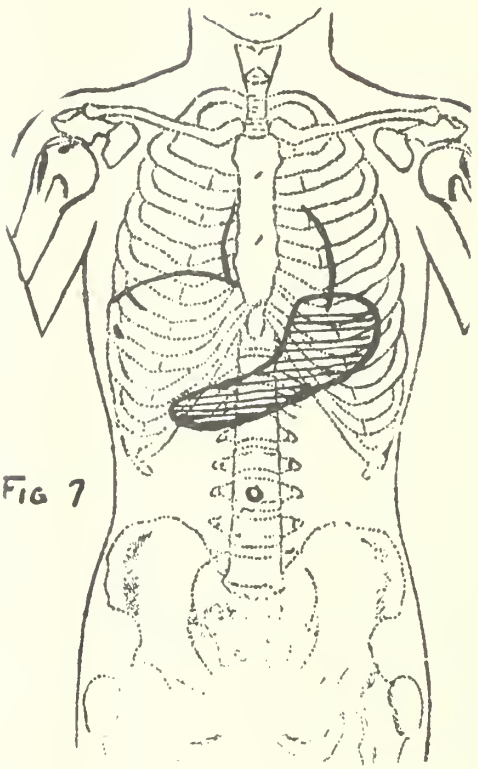
Pericolycystitis not infrequently leads to adhesions which drag upon the pylorus and fix it up under the right rib border. The stomach shadow is high, runs diagonally across the upper abdomen, is shaped like a steer's horn, and has little mobility. Such a finding speaks for gallbladder disease.

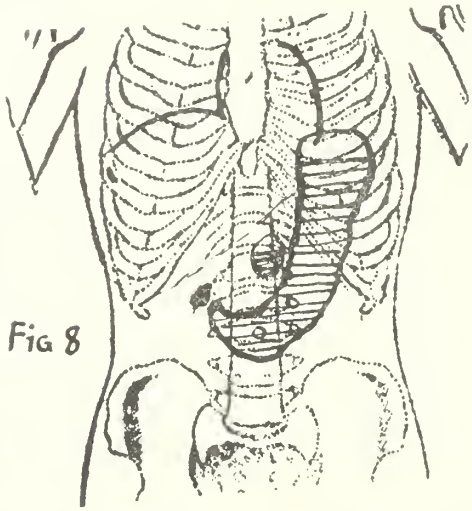
Other perigastric adhesions lead to distortion and fixation of the stomach shadow, tooth-like projections of the shadow occurring at the adherent area.

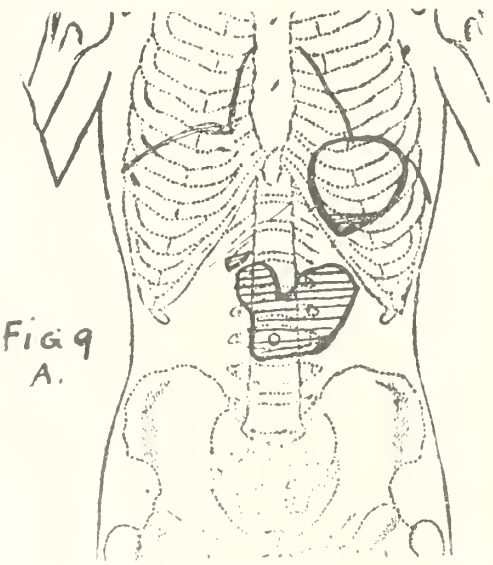
ORGANIC DISEASES OF THE STOMACH WALLS.

A flat ulcer of the stomach gives rise to no abnormality of the stomach shadow, but associated with every active ulcer wherever situated is an accompanying pyloric spasm. This pyloric spasm interferes with the emptying time of the stomach, prolonging it to six hours or more. This prolongation of the emptying time, readily recognizable by the X-Ray is of great diagnostic aid, and is so uniform that it is one of the most valuable of all diagnostic points in considering whether a gastric ulcer is or is not present, and in determining whether an ulcer known to have been present has or has not healed. The tender point









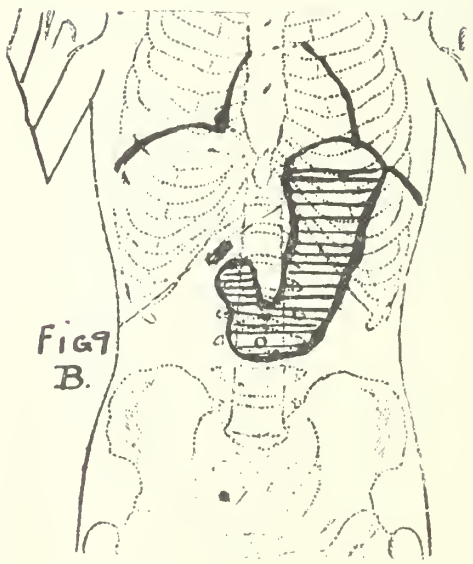


Figure 6—Pyloroptotic atonic pseudo-hourglass stomach.
Figure 7—Pylorus dragged up under the right rib border by pericholycystitic adhesions.
Figure 8—Penetrating ulcer of the lesser curvature.
Figure 9—Two radiograms of the same stomach at different times—a, showing hourglass stomach temporary and therefore due to spasm.

present is found to be within the stomach shadow, it as a rule corresponding to the site of the ulcer.

Duodenal ulcers lead to a hypertonic form of stomach shadow. The organ empties within the normal time, the tender point is over the duodenum. As long as a duodenal ulcer is associated with this form of stomach the chances of its healing under medical treatment are extremely good, but if dilatation be present, or the emptying time be prolonged much time will be saved if the patient be referred to the surgeon for gastro-enterostomy.

Chronic penetrating ulcers of the stomach are of not uncommon occurrence. The picture they present is striking and characteristic. Outside the normal stomach shadow, apart from but in close proximity to it, and usually on the side of the lesser curvature, is an additional bismuth shadow. This bismuth shadow has an air bubble capping it, it thus being a miniature of the gastric shadow. It is due to a part of the bismuth meal having found its way through the stomach wall into the ulcerated cavity in the neighborhood. In this cavity remnants of food may stagnate for some time, lactic acid be produced, and thus the stomach contents after a test meal may show both hydrochloric and lactic acid. Such a radiographic picture always means a penetrating ulcer, which may or may not have undergone malignant degeneration. Such a picture may not be present in an antero-posterior exposure though an oblique view might at once demonstrate it, the stomach and cavity shadows thus being separated.

A chronic ulcer may lead to an hour-glass type of stomach, a condition readily radiologically demonstrable though clinically very difficult of diagnosis. This hour-glass condition of stomach is sometimes diagnosed, however, by the radiographer when it does not exist. The following hour-glass and pseudo hour-glass stomach shadows are recognizable:

1. The atonic hour-glass stomach. The failure of the bismuth meal to collect in any amount above the narrowed pulled out portion of the descending limb, and the other characteristics we have described should be sufficient to prevent error.

2. A segment of distended bowel of an extra ventricular tumor may indent the greater curvature of the stomach leading to a pseudo hour-glass effect. The line of the lesser curvature is continuous in such cases, the distended bowel is visible, the tumor if present is palpable. We have had no difficulty in preventing confusion.

3. A spasm of a part of the descending limb of the stomach may be present perhaps associated with an ulcer. A portion of the meal may collect in the stomach sac, a portion above the spasm which may be of some extent. Spasms are temporary, organic changes are constant. Radiograms in different postures and at different times show different results, and the diagnosis becomes apparent.

4. The organic hour-glass stomach associated with an ulcer shows as a rule a transverse constriction. The connecting line of bismuth as a rule does not arise from the most caudal point of the upper bismuth shadow, and is located near the lesser curvature. Change in posture does not change the shape of the shadow. There is an associated delay in the emptying of the lower compartment due to an accompanying dependent pyloric spasm.

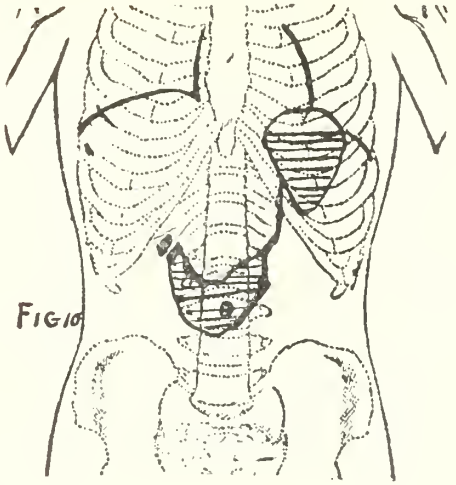
5. An hour-glass stomach may result from carcinoma, the growth surrounding the midportion of the stomach. The constriction is of greater extent and more irregular in outline. There is no delay in emptying the lower compartment, but rather a hastening owing to the accompanying achylia.

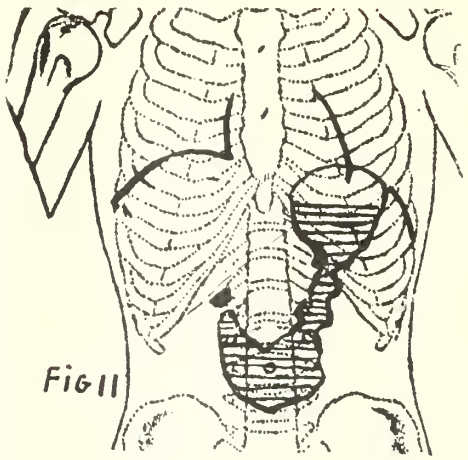
A chronic ulcer on the lesser curvature pulls the pylorus upwards and to the left so that the ascending portion of the greater curvature extends further to the right than does the pylorus itself. The so-called snail-like form of shadow is thus produced. There is of course delay in emptying due to the accompanying pyloric spasm, and the residue is displaced to the left.

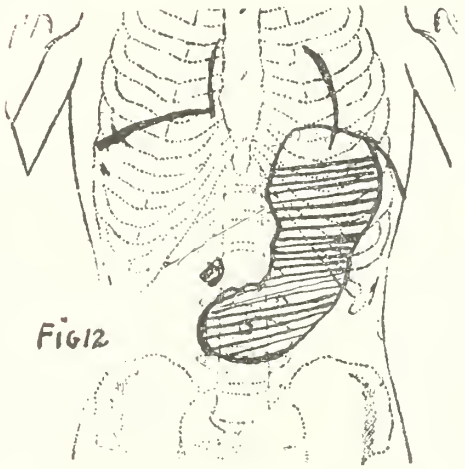
An ulcer of the pylorus may lead to stenosis with gastric dilatation and consequent marked delay in emptying. The radiographic diagnosis of dilatation of the stomach is difficult as long as the stomach wall retains its tone, but when atonicity is added to dilatation there is a striking descrepancy between the amount of food taken and the size of the shadow. The bismuth meal lies mainly in the stomach sac, and does not reach far up the descending or the ascending limbs. The lower border is convex, the upper border flat, a half-moon effect thus being produced. The shadow lies much further to the right than normal. If a double or triple meal be taken it may still be impossible to fill the ascending limb, and to obtain a radiographic shadow of this area it may be necessary to have the patient lie on the right side. The delay in emptying is quite marked and the shadow remaining at the end of four hours presents regular edges. The absence of a tender point over the pylorus suggests a scar rather than an active ulcer. Such a picture may occasionally be found and the obstruction be malignant in type. The pyloric edge of the residue is in such cases irregular and toothed, or a marked shadow defect may be present.

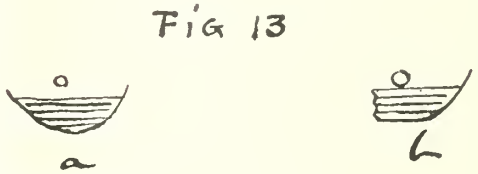
A similar discrepancy between the amount of food taken and the size of the shadow may occur in an atonic dilated stomach, in which the dilatation has secondarily followed the lack of tone, and is not dependent upon organic obstruction. The emptying time, however, is not nearly so much delayed, and the sickle-shaped residue is not displaced to the right. The occurrence of anti-peristaltic waves denotes the presence of an obstruction.

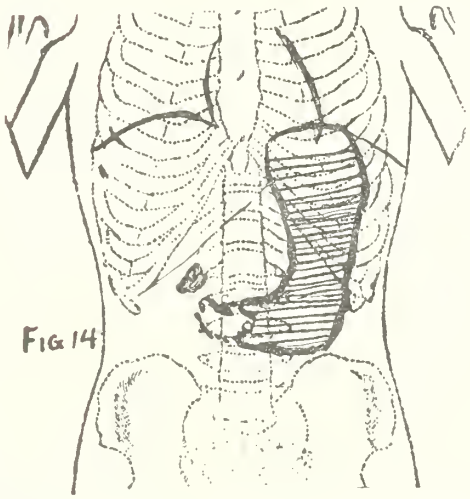
Carcinoma of the stomach leads to a growth which projects into the cavity of the stomach, thus taking up space which is normally occupied by a portion of the bismuth meal. As a result there is an absence of the dense shadow in the region of the tumor, and owing to the irregularity of the growth the outline of the defect is irregular or toothed. Such areas of shadow absence are











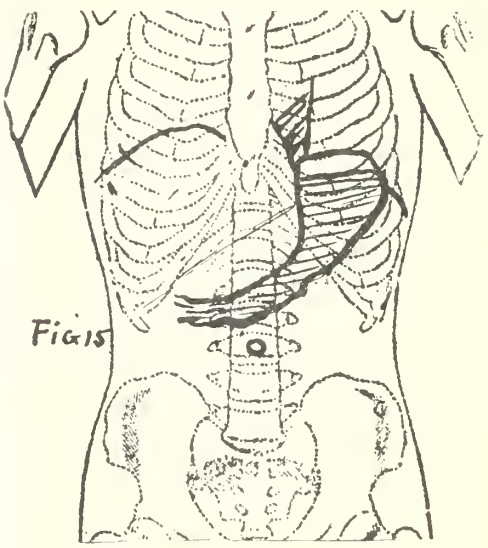


Figure 10—Hourglass stomach due to ulcer. Note the caudal point of the upper compartment is below the level of the beginning of the connecting band, the latter being situated near the line of the lesser curvature. The lower compartment empties slowly owing to an accompanying pyloric spasm.

Figure 11—Hourglass stomach due to carcinoma of the descending portion. Note the irregular margins of the connecting bar. Owing to the achylia the lower compartment will empty rapidly. Inoperable.

Figure 12—Note the ascending portion of the greater curvature turns upwards and inwards toward the pylorus producing the so-called snail type of shadow. Ulcer of the lesser curvature.

Figure 13—Residue after obstruction—a, from scar tissue; b, from presence of a carcinoma.

Figure 14—Carcinoma of the pylorus. Achylia. Delay in emptying. Defect in shadow at antrum. General shape of stomach shadow maintained. Operable.

Figure 15—Late shape of a scirrhus carcinoma. Note the contracted deformed shadow, the absence of the pyloric ring and the stagnation in the oesophagus. Inoperable.

highly characteristic of the presence of carcinomata in contradistinction to areas of shadow extension which are characteristic of penetrating ulcers. If a tumor be palpable and be clinically of gastric origin, and be seen radiologically to move with the stomach shadow, and no area of shadow defect be present, the tumor is probably non-malignant in type, since such tumors are commonly comparatively flat, whilst malignant tumors project into the stomach lumen. Further carcinomata lead to achylia and consequently there is no delay in emptying, but often a hastening unless the growth block the pylorus, and even then the resulting dilatation and delay in emptying is not nearly so marked as it is with stenosis due to a simple ulcer.

Three common types of gastric carcinomata are met with clinically.

1. The gastric carcinoma which develops on the basis of a simple ulcer.

2. The fungous carcinoma.

3. The diffuse infiltrating carcinoma.

Each of these varieties radiologically present differences which often render their recognition comparatively easy. With the first variety added to a shadow suggesting the presence of an ulcer there is an irregularly contoured area of shadow absence in the neighborhood which could only be due to the presence of a tumor projecting into the stomach lumen. Even if no such shadow defect be visible, the presence of hypermotility, and an emptying time within the normal will suggest that the ulcer had become malignant in character.

2. The fungous carcinoma leads to an irregularly contoured area of shadow absence in a stomach otherwise of normal form. The emptying time is within the normal unless the tumor actually block the pylorus, and achylia plus delay in emptying without shadow defect means a small pyloric growth, with shadow defect a large growth.

3. The diffuse infiltrating type of carcinoma narrows the whole pars pylorica or media. In the first case the function of the pyloric sphincter may be destroyed, and a continuous band of bismuth shadow reaches from stomach to duodenum. If the growth infiltrates the descending limb of the stomach the carcinomatous hour-glass type of stomach develops. The radiological characters of this has already been described. Dilatation of the proximal or cardiac end of the stomach then ensues, and finally the cardiac sphincter ceases to functionate, and food collects in the cardiac portion of the stomach and in the oesophagus itself, whilst that portion that passes through the hour glass constriction quickly empties into the duodenum.

Perhaps the greatest of all services which the Roentgen ray is frequently able to render the clinician in the consideration of gastric carcinomata is to tell him what cases are operable and what cases are not, and in many cases to suggest the character of the required operation. The fungous carcinomata that merely lead to a circumscribed loss of shadow, but to no general shadow distortion can be operated upon with fair hope of success provided no metastatic growths have occurred. The infiltrating form of carcinoma that has led to a distortion of stomach shadow presents an inoperable condition, and there is no reason for performing a gastro-enterostomy since there is no pyloric obstruction.

One warning is perhaps necessary. In the erect posture the fundus of the empty stomach is occupied by air, the remainder of the organ existing as a tube whose position roughly corresponds to that occupied by the lesser curvature. If the patient lies down the air is more uniformly distributed so that the stomach has more or less the shape of a steer's horn. This is the shape of the empty dead stomach. The loaded working stomach of a man in his working posture presents quite a different appearance and the surgeon who does not keep abreast of modern teaching will find so much discrepancy between the radiological picture of the active stomach of the standing man, and the appearance presented at operation by the empty inactive stomach of his prone patient, that he will be tempted to conclude unwisely that radiological investigation of the stomach has little merit. It is a pleasure to be able to refer him to the work of Schnieden and Courmont, who now rarely perform unnecessary, useless exploratory laparotomies, they deriving from a preliminary intelligent radiological study much of the information which they could only previously acquire after opening the abdomen.

The radiological investigation of the stomach is no longer then a matter of mere academic interest, but it is an essential element in the routine study of every grave case, and in many instances it is the procedure which physician and patient can least afford to leave undone.

Discussion.

Dr. J. H. Barbat, San Francisco: Dr. Cooper has left very little to be said on this subject. I simply want to reiterate what has been said. I have been doing some of this work and certainly have been pleased to find that radiology of the stomach has demonstrated very definitely that the most expert diagnosticians are not able by any other means to determine in a large number of cases either the position or the motility of stomachs as definitely as can be done by radiology. I have been using the flouroscope. The peristaltic wave can be seen distinctly, the tonicity of the stomach can be determined and we are astonished to find that even in cases diagnosed as ptosis of the stomach with retention the X-ray will often demonstrate the incorrectness of the diagnosis by revealing the exact shape and size of the organ and the time required to empty it. In these cases we must find some other cause if the symptoms persist and I feel that no surgeon should operate on any stomach case without a diagnosis confirmed by the X-ray.

Dr. W. W. Kerr, San Francisco: I have been talking with Dr. Cooper about these cases, first as to what we would judge to be a dilated stomach. A great deal of discussion has taken place frequently in going over stomachs because in the patients we found the greater curvature of the stomach below the umbilicus—that is when the stomach is distended it is in its normal field. In more than one such case I have seen operation urged because it was thought that the stomach was dilated. Dr. Cooper has brought forward the fact that the normal curvature of the stomach is one to two inches below the umbilicus. Again, when

the patient is in the prone position, of course it is above the umbilicus. That change of position therefore when we have to work without the radiogram enables us to come to some idea as to whether we are really dealing with a dilated stomach or a simple distension. The next point was in regard to the different causes that might lead to dilatation, the point upon which the doctor touched in regard to the atonic condition of the stomach muscle. I think there is no question that the stomach muscle possesses quite a number of functions very much as we have in the cardiac muscle. In many conditions we have secondary conditions giving rise to immense dilatation of the stomach which if it were treated surgically would be extremely unfortunate. In one case, a woman about 40 years of age, there was an immense fibroid existing for many years. She would be attacked at intervals with vomiting even if all food was withheld—sometimes two to three basinsful—a distinct gastric succorhea, with stomach distended down below the line of the iliac spines. In the course of treatment we washed out the stomach and it would soon contract again and be perfectly normal in outline and the patient would take a normal amount of food. I saw that occur with her at intervals of once in four weeks and then she would go along for several months. One cannot help associating such a change in the stomach with the same kind of thing we find in the cardiac muscle. The uterine fibroid in many cases seems to produce a toxin interfering with the muscle of the heart and when the fibroid is removed the patient will have a perfectly healthy heart in the course of a very short time. It is of importance to bear in mind that under similar conditions we can have a loss of tonicity leading to gastric dilatation that might tempt us to recommend gastroenterostomy and where repeated investigations would often save the patient and the surgical reputation.

Dr. R. S. Levenson, Los Angeles: It has been a great privilege to listen to this paper. It is very significant that in many of the important conclusions to which he comes as the result of the radiograms he comes to the same conclusions that I mentioned in my paper as the result of analysis and the use of the tube, especially with regard to the significance of achylia with delayed emptying. Dr. Cooper called especial attention to that as the case in carcinoma of the pylorus. In one point I take issue and that is in regard to my use of the tube. There are differences which occur and conclusions one comes to—that is with regard to the motility in duodenal ulcer. He found usually hypermobility. I usually find pyloric spasm with delayed emptying. I recall an article by a German in which he mentioned the collection of hypersecretion dependent upon the different methods used.

Dr. C. M. Cooper, San Francisco: Regarding the point made by Dr. Levenson it depends upon the stage in which you get the duodenal ulcer. Early the hypermotility more than compensates for the pyloric spasm. Later the pyloric spasm is predominant and there is delayed emptying.

THE DIAGNOSIS OF LATENT GONORRHEA IN THE FEMALE.*

By WALTER S. JOHNSON, M. D., San Francisco.

Recognizing the difficulty of presenting anything new on this subject, my principal aim is to promote a discussion upon this obscure condition. Therefore, I will confine myself to the diagnosis of a disease which presents only probable or uncertain signs. My investigations were stimulated by the following case:

Mrs. L. consulted me in October, 1904, informing me that she had been accused by her husband to whom she had been married only two months, of infecting him with gonorrhea. She denied having any symptoms or any discomfort and wished me to make a thorough examination. A careful history of previous illness or complaints of any kind was negative, except for diseases of childhood. A most careful examination was made for any evidence of clinical signs and with exception of erosion of the cervix, these were practically nil. Smears were taken from the urethra and cervix and subjected to a definite amount of study. Failing to find the characteristic diplococci, I gave her a clean bill of health. Several weeks elapsed and I was served as a witness in a suit for divorce. Upon my testimony, the woman was granted her prayer before the courts. One year later, Mrs. L. again consulted me. This time her mannerisms were less defiant and her feelings were less injured. She was afraid she might have infected her friend and solicited re-examination. The clinical and bacterioscopic examinations were negative as before. At her suggestion her friend came to me for examination. He received treatment for an undoubted gonorrhea. He vigorously denied having had sexual congress with anyone but the woman in question for a very long period and this was his first infection. He acknowledged having had coitus during and immediately after menses, and attributed his infection to this cause. An examination was made immediately after her next period and a number of gram negative diplococci were found. She then admitted having had an attack of some inflammatory disease of her womb which confined her to bed for a month eight years previously.

That the diagnosis of latent gonorrhea in the female possesses the utmost difficulties, is admitted by all authorities on the subject. The clinical evidence of gonorrhea is based on the presence of changes in the tissues, yet these changes are by no means pathognomonic, as they may be produced by other microorganisms or irritants.

The bacterioscopic method of diagnosis, because of its limitations, is also uncertain. Notwithstanding these difficulties, with proper study of the clinical and bacteriological evidence, we can make a diagnosis in the greater number of our cases.

The urologist and those who treat genito-urinary diseases are often called upon to diagnose cases brought for confrontation. In fact, it is not uncommon to have a female come most voluntarily for an examination upon the request of one who feels that she carries the source of his infection. She apparently is in the best of health and does not experience any discomfort. Upon examination such women present no trace of virulent disease, but have some of the probable or uncertain signs thereof.

The indefinite persistency of the infection in the latent or chronic stages may be better understood by a careful consideration of the organs usually affected and the tissue changes which may be produced by a gonorrheal infection.

In old urethritis the subjective symptoms are commonly absent. The objective signs are a milky discharge and a periurethral infiltration; the meatus is everted usually exposing one or both of the glandular orifices, which normally lie concealed just within the external meatus. There are often small

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

patches of deep red color surrounding the meatus and visible portion of the urethra. At first appearance one would suspect a urethral caruncle, but no well-defined vascular tumor can be found.

In the chronic stage there is less diffuse distribution of the organism and of the leukocytes, the gonococci confine themselves to isolated areas in the superficial structures, particularly those areas which present to the unaided eye congested and ulcerated surface.

The examination of the vulvo-vaginal glands must be carefully noted. The gland itself may feel like a little dense sclerotic mass the size of a small bean, the residuum of an old gonorrheal infection, called by Sanger *"adenitis glandulae bartholinae scleroticanes."* The duct of the gland may feel like a small, dense cord. The outlet may appear intensely red. It is likened to a flea bite and has been called the macula gonorrhoica. We should never make a diagnosis on the macula alone.

Investigation of the vaginal secretions is far from dependable, as the area and plicate surface of the part together with the often notable quantities of its secretion not infrequently hinder discovery of the gonococcus. A reddened, inflamed, patchy or granular vagina with a milky secretion is often evidence of an old gonorrhea.

The diagnosis of latent infection of the cervix and uterus is by no means an easy one. Here we have tissue changes which may be brought about by other causes. The cervical mucous makes the discovery of the gonococcus by the microscope or culture difficult. When gonorrhea of the cervix and uterus becomes chronic, the discharge lessens and becomes mucoid or muco-purulent and mixed with many squamous epithelia which contain cocci.

According to Bumm, the prognosis is doubtful as the cocci may disappear for weeks, then reappear. Yet gonococci may be present when the mucous is clear. Chronic gonorrhea of the cervix and uterus means the presence of other bacteria together with the gonococci, a fact which still more confuses an attempt at diagnosis by the microscope or culture.

Bandler asks the question, "Are we in a position clinically to diagnose chronic gonorrhea when a few pus cells and no gonococci are found?" He believes certain cervical alterations are of importance especially when chronic urthritis is not present, when "macula gonorrhoica" or other external evidences are entirely absent, and when tubal and peritoneal changes are not marked. He has adopted the following axiom, "That cervical erosions plus a pathologic cervico uterine discharge in nulliparae is presumptive evidence of cervico uterine gonorrhea."

The problem of diagnosis here offers greater obstacles than that which confronts us in similar conditions of the prostate where we may rely upon the history, threads in the urine, prostatic massage, etc. Suppurative endometritis, pyosalpinx, hydrosalpinx, and adnexal tumors which may be of gonorrheal origin, I will purposely omit as I wish to confine my subject to those types of the disease which present unrecognized characteristics.

The biological peculiarities of the gonococcus and the peculiar condition existing in the mucous membrane of the female genital organs, greatly impair the value of bacterioscopic diagnosis. The gonococcus can be satisfactorily demonstrated only in those portions of the mucous membrane in which it is present alone or associated with few other microorganisms. It is found most easily in the urethral secretions in vulvo vaginitis of children or in the cervical secretions of the nulliparous women, while it is much more difficult to demonstrate in the cervical secretion of the multiparous women with patulous external os. It can rarely be found in the vaginal secretion of the adult.

Another limitation of the value of bacterioscopic methods is the tendency of the gonococcus to hide in recesses and folds of the mucous membrane of the cervical tissue and to occupy the epithelium of the deeper layers. Therefore, the failure to find gonococci in no sense excludes their presence. The mere examination of a loop full of cervical discharge placed on a slide and a few moments' study does not count for much. The diagnosis which leaves no doubt can only be based on the finding of the gonococcus in the secretions or tissues. The small size of the gonococci and their scarcity in the tissues in the chronic cases, necessitates the microscopic examination of a large number of sections.

While there are limitations to the bacteriological diagnosis, they are minimized by proper studies. Under favorable conditions, such as a search immediately after menstruation, our efforts are frequently rewarded by success. While mention is made of this by some writers, its real importance has not been fully emphasized. I have selected from my records thirty-two cases of latent gonorrhea, all having been accused of infecting others. All denied ever having had the disease or suffering any discomfort. In the pre-menstrual examination, twenty-three had probable signs of the disease, seven had uncertain signs, and two had non-appreciable evidence. In the post-menstrual examination Gram negative diplococci were absolutely demonstrated.

In medico legal cases and for the purpose of determining whether the secretions are capable of causing infection, a bacteriological examination immediately after menstruation is indispensable.

The value of cultural methods in the diagnosis is seemingly uncertain. There is a diversity of opinions between the laboratory workers and eminent men who diagnose by the microscope. No careful laboratory worker would think of declaring an organism to be a gonococcus because of a so-called typical morphology, or because of an intra-leukocytic position; while the clinician considers the finding of such an organism, if it be decolorized by the Gram method, to be sufficient for an unequivocal diagnosis of gonorrhea.

In conclusion, the fact that this paper is limited to fifteen minutes, precludes the possibility of an extravagant dissertation on the subject. Purposely many points have been untouched. Nevertheless, I will again emphasize the following points, which in my opinion, escape the consideration of many workers in the field:

First, we should never pronounce a woman free

from the disease till we have made a persistent study of the entire genital tract. Second, the examination of a smear taken from the urethra, vagina or cervix and failure to find the Gram negative diplococci, in no sense excludes their presence. Third, the complete disappearance of both subjective and objective symptoms is not incompatible with the presence of gonorrhea. Fourth, in closing let me summarize my experience briefly by stating that however careful and conscientious one may be a certain percentage of cases will be misunderstood unless a thorough and searching examination be made at the cessation of the menstruation.

THE CLINICAL FEATURES AND NEUROLOGICAL FINDINGS IN POLIOMYELITIS.*

By THOS. J. ORBISON, M. D., Los Angeles.

The chronology of the nomenclature of the disease under discussion would indicate the uncertain steps by which we have arrived at the present name. It is marked by the clearly unsatisfactory names "Heine-Medin disease," "infantile paralysis," "infantile cerebral palsy" and the equally unscientific "epidemic paralysis." Even the name "anterior poliomyelitis" is giving way to that of "poliomyelitis." There are those who hold with Batten of England, that polioencephalomyelitis is even better as being technically more anatomically accurate. And this view is correct inasmuch as we know that the disease is not confined to the anterior cells of the spinal cord nor to the cord alone but has been found to affect any part of the nervous system. Indeed, the researches of Flexner, Peabody and Draper have demonstrated disease foci in various organs of the human body other than the nervous organs, especially the lymphatic and parenchymatous organs. (Further reference to this will be made).

A word about the chronology of the disease. In 1840 Heine published his "Beobachtungen über sahmungszustaude der unteren Extremitaten," and "Die Spinale Krinderlachmung." In 1887 Medin described an epidemic in Stockholm of 44 cases which was the first important work of its kind; hence the unscientific name, "Heine-Medin disease," suggested by Wickman. "The histopathological picture of acute poliomyelitis dates from the work of Provost and Vulpian in 1866. They first directed attention to the degeneration and disappearance of the anterior cornual cells in the segments of the spinal cord controlling the paralyzed parts." (A. R. Allen in Penn. Med. Journal, Dec., 1911.)

It is of interest to note that during the last 30 years more than 75 epidemics have been reported. The greatest number of individuals affected in a single epidemic was in the one reported in Pennsylvania in 1910 in which 1076 cases were reported to Health Commissioner Dixon. It is evident that the clinical features of poliomyelitis must have been thoroughly and accurately recorded.

Clinically, therefore, poliomyelitis (polioencephalomyelitis) is an acute infective disease of as yet unknown cause, having an especially selective action on the nervous system. According to Spiller we recognize the following clinical types: Abortive, spinal, encephalic (or a combination of the two), meningeal, polyneuritic, Laudry's paralysis, ataxic, a possible herpetic and late atrophic type. These are for the most part clinical types in which neuropathological findings have confirmed the clinical-anatomical features. In support of these types the histological studies of the disease by Flexner, Allen, Dixon, Draper and others (both in monkeys and human beings), have shown lesions in the spinal cord, intervertebral ganglia, medulla, pons, cerebellum, cerebrum and meninges. They found that both the gray and white matter of the cord and brain are subject to injury. Going a step further they found that the pathology of this disease included lesions in the lymphatic tissues generally, including the minute lymphoid nodules in the walls of the blood vessels, bronchi and periportal connective tissue in the liver and elsewhere. Lesions that are characteristic and more or less constant were found in the lungs, spleen and liver. In the latter they were for the most part hyaline focal necrosis of liver cells of large extent and many in number. As they expressed it: "What is remarkable is the large number present in sections; a dozen or a score or more in an ordinary section." During the last few years a number of trained investigators have carried out the most exhaustive and painstaking experiments for the purpose of identifying the specific cause of this disease, the character of that cause, its "carriers," its possible "host," the means and methods of its transmissibility. Every possible angle of every known phase was minutely examined and the evidence weighed. For instance the Department of Health of Pennsylvania carried out a series of experiments with Ehrlich's "606" in the acute poliomyelitis of monkeys. They also tried the effect of formaldehyde upon the virus of the disease in vivo. They carried out a state-wide search for data that would convey information upon every phase of the disease bearing on its epidemiologic aspects. The results are now public property and I am indebted to my friend Dr. Samuel Dixon, Commissioner of Health of Pennsylvania, for furnishing me with the latest information at his command for the purposes of this paper. As President of the Academy of Natural Sciences he was well fitted for his duties as director of a state-wide investigation.

With his accustomed attention to minute detail he gathered statistics upon the following subjects: Seasonal distribution, intensive studies of 748 cases, examination of the records of 605 physicians; data as to exposures to heat, cold, cuts, swimming, wading in streams, running barefoot, prevalence of other diseases, the bites of insects; the presence as symptoms of irritability, stupor, nausea, vomiting, retraction of head, nervous twitchings, convulsions, diarrhea, constipation, retention of urine, insomnia, sleepiness, sore throat, skin eruptions, temperature changes. Attention was paid to the housing conditions, number of members of household and the

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

ones affected, whether contact was direct or indirect; whether the windows were screened or not; whether plumbing was sanitary, whether garbage was exposed or not and how it was disposed of; ice supply was examined and milk supply. Foods were examined and all vermin reported. These were only a fraction of all the points that were collected, tabulated, compared and examined.

The results of these and other investigations have been both satisfactory and disappointing; because, though we seem to be upon the threshold of the discovery of the specific etiological factor, as yet we have not identified it. While able to make a shrewd guess as to its character and method of elaboration yet these, too, remain hidden.

It is satisfactory inasmuch as it has enabled one of the most formidable investigators of the dread disease, Simon Flexner, to write "The case for the treatment of human beings is less hopeless, as I view it, than is commonly believed. It should be taken into account that much of the supposed damage inflicted on the nervous system of human beings at the onset of the disease is remediable. For the brunt of the disease falls not in the nervous tissue but on the meninges where it can in turn be opposed by therapeutic measures. As many as 25% of the paralyzed may make complete recovery; and there is restored to a far larger percentage by the usual processes of delayed resolution, a considerable degree of power in and use of muscles once severely paralyzed."

The successful transmission of poliomyelitis from man to monkeys, and from monkey to monkey has demonstrated that the disease is due to a specific virus which passes through a bacteria-proof filter. Up to a very short time ago it was denied that rabbits could be infected and the disease transmitted. But this has been done and not only this but it has been transmitted from the rabbit back to the monkey.

The value that accrues to the human race at present may be measured by the value of the recommendations that have been, with reason, deduced from the information that has been gleaned from the various investigations.

The report of the committee of the American Medical Association contains, among others, the folowing: Preventive measures, 1, Isolation and screening of all patients known to have or suspected of having the disease.

"Two. Disinfection of all discharges from patients and of all articles used by them and their attendants.

"Three. Fumigation of the premises with formaldehyde on release from isolation.

"Four. Quarantine of persons in contact with patients is not justifiable but members of patient's families should be excluded from school during period of patient's isolation and possible incubation period.

"Five. The daily administration of hexamethylamine to those in contact with the sick is recommended."

The symptomatology of polio-encephalo-myelitis differs according to the type noted. As an example of the abortive type a case seen by the writer in 1910 is of interest. A boy aged 8 years, seen in consultation with Dr. MacKerras of Sierra Madre, began to develop symptoms resembling influenzal meningitis: rapid breathing that was without thoracic pain (pains in joints and muscles were present, however); great sensitiveness to touch and handling; Kernig's sign positive; Babinski toe reflex present; temperature running about 102°; some retraction of the head; patient exhibited anxious facies and complained of headache and general tenderness. He did not want to be touched; knee jerks were absent.

This boy was given hexamethylamine until he was saturated, his bowels were kept open, salol and phenacetine and antipyrin were administered in appropriate doses. In a few days his symptoms became less severe and subsided. He later developed an empyema which was attended to surgically and he wholly recovered. This is the type that is oftenest seen by the internist and only occasionally comes to the notice of the neurologist except during an epidemic. It is the type that heretofore has been so often wrongly diagnosed.

The encephalic type likewise often fails of correct diagnosis: A little boy was seen in consultation because of a spastic monoplegia, inability to walk and talk and epileptiform seizures beginning in the spastic arm. A diagnosis of old polio-encephalitis was made and operation advised to remove irritating cerebral focus. This was done, the focus was found directly in the exposed area and removed, together with meningeal adhesions. The result was a very happy one inasmuch as the convulsions were stopped, intelligence greatly improved and the child was taught to walk.

The spinal type is the most common. Any neurological clinic in the larger centers of population handles many of this type yearly. Symptoms begin with a sudden malaise, possibly a chill, more or less high temperature, pain and general tenderness, diarrhea and vomiting. The child seems to be very sick but soon recovers, except a resulting paresis or paralysis that is more or less general. It may take the form of Landry's ascending or descending paralysis in which all the extremities are involved. This is most terrifying to the parents; recovery even from this type has been noted by Spiller, John K. Mitchell and others. Most often one or more isolated bundles of muscles are found to be paralyzed, e. g., selected groups of muscles of a leg and arm, etc. Generally the paralysis that is at first noted begins to improve and the only end result may be that above noted.

As an example of the combined cephalic and spinal type, I would speak of a child three years of age that was referred to the neurological clinic of the University of Pennsylvania by Dr. Crozier Griffith while I was assistant to Spiller's service in 1906. In this child, following the acute febrile onset, the knee jerk was absent on the right side and present on the left; there was a paresis of the right peronei and a flacid paralysis of the right deltoid.

The treatment was massage and electricity with

arsenic and strychnine in appropriate doses internally. The result was very good after weeks of treatment. The child could use the affected arm and the electrical reactions became normal in the affected muscles.

Polioencephalomyelitis has been so thoroughly investigated and the various manifestations of the disease complex so carefully analyzed that we should earlier and oftener make the diagnosis, even in isolated and sporadic cases.

In times of epidemic every consideration tending to prophylaxis and arrest should be unhesitatingly enforced.

NECROSIS OF THE HYOID BONE.*

By AD. B. BAER, B. L., B. S., D. D. S., M. D., San Francisco.

History of case: Male, 24 years of age. A swelling had developed at the base of the tongue which was described as being about the size of an almond. There was also a swelling in front of the neck externally just to the right of the median line and about three-fourths of an inch below the great wing of the hyoid bone. The external swelling gradually enlarged to about the size of a small walnut, when it broke and discharged pus externally upon the anterior surface of the neck. Diagnosis of a cyst of the hyoglossal duct was made and patient was operated on by a New York surgeon, the diseased area being reached through an incision two inches in length, across the front of the neck, perpendicular to its long axis. The swelling recurred at the end of two months, when it was reoperated by a second surgeon, who made the same diagnosis. The patient then changed his residence to San Francisco for the purpose of building himself up and the condition again recurred at the end of six weeks.

By way of preliminary statement it will be recalled that the thyroid gland develops from the oral cavity in the region of the base of the tongue. The gland buds off from the base of the tongue and finally reaches its position at the front and sides of the neck. It consists of two lateral lobes which lie across and around the trachea like a horseshoe, extending upward to the thyroid cartilage and connected across the median line by a narrow transverse portion, the isthmus. In early embryonic life, the gland has a duct, the thyroglossal duct which passes from the isthmus to its original point of origin at the foramen cecum on the base of the tongue. The duct usually becomes obliterated, becoming a simple cord of epithelium. The upper opening remains as the foramen cecum on the dorsum of the tongue. In some cases the duct remains extant through life and frequently gives rise to cysts, which are known pathologically as cysts of the thyroglossal duct. A great many cases of this condition are on record, have been operated and cured. It was such a condition for which the patient has been operated.

On examination there was a three-inch scar across the front of the neck just above the thyroid cartilage. The entire area beneath the middle portion of the scar was swollen and felt soft and doughy to the touch. The left side was more swollen than the right, but there was a slight discharge of pus from a very small opening just to the right of the median line. Pressure anywhere along the scar increased the flow of pus. It was not possible to feel any of the underlying structure, because of the swelling and of the scar. The opening of the sinus was too small to permit the passage of a probe. A second attempt to pass a probe the following day was again futile, for while we were able to enter the opening of the sinus at this time, the pain was so great that patient would not tolerate further manipulation.

In the course of about three days the swelling began to be felt by patient on the inside of the mouth. This swelling increased in size until it began to interfere with the patient's respiration. Using a laryngoscope, a red, inflamed mass could be seen at the base of the tongue on the left side. An opening into this area with a long curved bistoury was followed by a free discharge of pus. Washing this pus cavity daily resulted in very decidedly reducing the swelling upon the front of the neck.

The region of the sinus on the front of the neck was then thoroughly cocainized and another attempt was made to pass a very small, flexible probe. About an inch beneath the surface, the probe came to a stop against a hard substance with a definite and unmistakable feeling of dead bone. The hyoid bone, which is the only bone in this location, could not be palpated because of the swelling. Ordinarily it lies just beneath the surface of the skin. Patient was dismissed. A very careful search of the entire medical and surgical literature of the subject revealed seven reported cases of hyoid bone necrosis. At the next visit of the patient an X-Ray picture was taken, which showed a very definite necrosis of the body of the hyoid bone. A second X-Ray was taken with a probe in the sinus and the plate showed the probe passing directly into the necrosed area.

A diagnosis of necrosis of the body of the hyoid was made and patient was advised to undergo a third operation. A specialist was called in consultation and he disagreed with the diagnosis, claiming that we had misinterpreted our X-Ray findings. He made a diagnosis of cyst of the thyroglossal duct. Patient therefore refused to submit to a third operation and again left for the country. I was called by telephone at 4 a. m. about two weeks later, saying that he was "choking to death" and could only breathe with great difficulty.

A second abscess was opened at this time just above the entrance of the trachea. The following day Dr. C. M. Cooper and Dr. M. Herzstein were called in consultation and both men agreed with our diagnosis of hyoid bone necrosis. Patient was then kept under treatment for two weeks, until the swelling had enttirely disappeared, when he left for Rochester to be operated by Dr. Chas. Mayo. At this time patient's symptoms had entirely cleared; Dr. Mayo refused to operate upon our diagnosis. Patient insisted upon being kept under observation, however, and at the end of five days we received word that Dr. Mayo had removed the entire body of a necrosed hyoid bone. Patient returned to the coast in six weeks; after a lapse of five months there is as yet no sign of recurrence. The region of the removed hyoid bone is filled with dense fibrous tissue and there is no interference with the function of the tongue or with swallowing. The patient talks with a heaviness or fullness of the voice, which is accounted for by the fact that the right side of the larynx is paralyzed, the result of cutting the right superior laryngeal nerve during operation.

It is practically impossible to arrive at any satisfactory explanation as to the possible cause of this very rare condition. It is easy to see how the condition could have been associated with and mistaken for the very much more common condition, cyst of the thyroglossal duct.

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

SOCIETY REPORTS

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of July, 1912, the following meeting was held:

Regular Meeting, July 9, 1912.

1. Recent Researches in Tropical Diseases. Dr. Creighton Wellman.
2. The Importance of Non-Diabetic Acidosis. Dr. E. C. Fleischner. (To be published in Calif. State Journal.)
3. Post-Operative Acidosis. Dr. C. C. Levison. (To be published in Calif. State Journal.) Discussed by Drs. Clarence Quinan, D'Arcy Power and E. C. Fleischner.

SHASTA COUNTY.

The Shasta County Medical Association held a meeting at Yreka on July 20th, in the Courthouse. Owing to the delayed trains, it was impossible for a number of the Shasta county doctors to get here. Those present were Dr. Legge, of McCloud; Dr. Cornish and Dr. Thompson, of Dunsmuir; Dr. Nutting, of Etna; Dr. Milliken, of Fort Jones; Dr. Tebbe, of Weed; Dr. Pius, of Montague; Dr. Saylor Redding and Dr. McNulty, of Yreka. Dr. J. M. Flint, professor of surgery at the Yale University, attended the meeting as a guest of Dr. Legge. A paper by Dr. Nutting on "Fractures of the Elbow," also a paper on "Appendicitis," by Dr. Legge, were very interesting. Dr. Flint addressed the meeting on general remarks in surgical work. The visiting doctors were entertained at a dinner given by Dr. McNulty at his home.

SOCIETY OF THE SAN FRANCISCO POLYCLINIC.

Wednesday, August 7, 1912. 8:30 p. m.

1. Sarcoma of Ethmoidal Cells and of Left Nasal Bone. Dr. H. L. Wagner.
2. Physical Disturbance due to Hypertrophy of Prostate. Report of the Case. Dr. Howard Somers. Discussed by Drs. M. Krotoszyner and F. Freytag.
3. Some Factors in Habitual Constipation. Dr. Raymond Russ. Discussed by Drs. Ryfkogel, Lartigau, Freytag and Russ.
4. A New Surgical Procedure for Retro-Displacement of the Uterus. Dr. S. H. Buteau, of Oakland. Discussed by Drs. Lartigau, Hoffman, Castle and Buteau.
5. Echo of the Meeting of the American Medical Association. Dr. Cullen F. Welty.

Refreshments were served after the meeting.

SONOMA COUNTY.

The Sonoma County Medical Society met in the office of Dr. Jackson Temple July 13th, and listened to a very able paper by Dr. W. P. Burnham, of San Francisco, on "Brain Tumors." The paper proved of much interest and was very instructive, bringing out the very latest ideas on the subject treated.

The meeting was attended by Dr. W. J. Kerr and Dr. J. J. Keating of Sebastopol; Dr. W. C. Shipley, of Cloverdale, and Drs. J. H. McLeod, A. R. Howard, J. W. Scamell, F. O. Pryor and Jackson Temple, of Santa Rosa.

Take a Look Through the Advertising Pages; You Will Learn Several Things

SOUTHERN CALIFORNIA PUBLIC HEALTH ASSOCIATION.

A meeting of the Southern California Public Health Association, called for the purpose of discussing the symptoms, treatment and methods of prevention of infantile paralysis, was held August 10th in the Council Chamber at the City Hall, Los Angeles. Over one hundred physicians, most of them health officers from various cities and towns of Southern California, from such widely divergent points as Santa Barbara on the north, San Diego on the south and Imperial on the east, were present.

The meeting was presided over by Dr. C. C. Browning, of Los Angeles, president of the association, and many interesting scientific questions in connection with the general subject were discussed, leading to the formulation of methods of prevention of the disease. At the close of the meeting it was decided that a committee of Southern California physicians should be appointed to draw up information for the prevention of the disease, which information, together with a pamphlet telling of the more important facts pertaining to the symptoms and care of infantile paralysis, should be furnished the physicians throughout this section of the state.

NEWS NOTES FROM NEWSPAPERS.

Bakersfield has added Dr. Peter Cuneo to its board of health.

The late Dr. W. T. Maupin left an estate which is appraised at $33,112.

Bakersfield, it is said, is to have a Southern Pacific Hospital located there.

Santa Barbara, up to the time of writing, has remained free from poliomyelitis.

Dr. Fred. J. Crease, of Bakersfield, is a candidate for the Assembly; good luck.

San Diego, in spite of precautions, has been invaded by the dread epidemic of poliomyelitis.

It is estimated that 75,000,000 red cross seals or anti-tuberculosis "stickers" will be sold this year.

Dr. W. F. Gates, of Oroville, has announced that he is a candidate for the Assembly; good luck to him.

Dr. Beverly MacMonagle, who died in Paris in May, left an estate that is estimated to be worth $250,000.

Sacramento has been sued for maintaining a nuisance; the nuisance is none other than the County Hospital!

At Napa State Hospital, Dr. E. J. Donnelly has been appointed to take the place of Dr. W. C. Porter, resigned.

Dr. Ellis N. Harbert has been appointed to the board of directors of the Stockton State Hospital, vice E. N. Pickle.

San Jose has been startled to learn that it has no meat inspector and that impure meat is being sold to its citizens.

Malta fever has been known to exist for a long time in the South-west; recently a case was reported in San Francisco.

In San Jose the woman's civic clubs have taken up the question of "swatting the fly" and it is expected that great activity will result.

Oakland proposes to establish a Public Welfare Commission with the object of opposing vice and also the activities of the anti-health cranks.

In Los Angeles the "sane fourth" idea worked out most wonderfully. No accidents were reported and but one fire, with a damage of $450.

The "Great Abbo" is dead. His real name was S. S. Prosser, but he quacked around the country under the name of "Abbo" for a number of years.

To make all hospitals fireproof is the purpose of an ordinance now being considered in Los Angeles. A number of hospitals are opposing it.

Birth certificates should be filed within five days,

as required by law. Delay in sending them causes a good deal of trouble in the office at Sacramento.

Berkeley had a violent fever of civic indignation because Dr. Gillihan, its health officer, reported that many places where food stuffs were prepared were filthy.

The new Mt. Zion Hospital, San Francisco, was dedicated on August 14th. The building cost $280,000 and $25,000 additional will be expended in furnishing it.

In Oakland, a clairvoyant was fined $250 for practicing medicine illegally. She could not drive the evil spirits out of the body of the sick applicant for her treatment.

Meat inspection in San Francisco is to be greatly improved, according to a recent decision of the board of health. There is certainly room for plenty of improvement!

Dr. Washington Dodge, of San Francisco, has been appointed first vice-president of the Anglo and London-Paris Bank. He has not practiced medicine for many years.

The Fresno "Herald" is startled at a report showing the number of children, in public schools, who are not physically fit. The newspapers are waking up; that is a good sign.

In Lompoc valley, a rabid dog bit a child and later a cow. The child was given the Pasteur treatment and lived; the cow died. Sometimes children are worth more than cows or hogs.

The clerks in a store in San Diego have formed an organization with the object of studying health conditions and similar problems that directly affect them. Good idea for other stores to follow.

Poliomyelitis has appeared in Nevada, at Las Vegas, where two children in the same family have been attacked. All children under ten years of age have been excluded from public gatherings.

A case of spotted fever occurring in a sheep driver from Northern California, has been reported from the French Hospital, San Francisco. This is the third case found in this state recently.

Typhoid fever has become so prevalent in the vicinity of Sonora, and indeed in the mountain section generally, that the Standard Lumber Co. has had its men given the anti-typhoid treatment.

The radio-activity of the mineral springs of California has stimulated the interest of Dr. Jellinek who is having them tested. We expect to publish an interesting report on this matter at a later date.

Dr. T. B. McClintic, who had been working for several years on the puzzling disease, spotted fever, died of it quite recently. Another martyr to science. Why not get Senator Works to study spotted fever?

In Vallejo, one of the fasting cranks died after going without food for 43 days. Why not make up a list of people to whom we could advise this experiment? If it would work on Works it would be good work.

Dog-muzzling having been insisted upon by Dr. Powers, health officer of Los Angeles, the dog owners' association became very angry and wanted to recall Dr. Powers. Too bad a few of these cranks cannot be bitten!

The Lane Medical Library building has been completed. It is located at Sacramento and Webster streets, San Francisco, and is open to all physicians. Its stacks will hold 80,000 volumes and 30,000 can be added when needed.

Dr. Minerva Goodman has been appointed inspector of public schools in Stockton. She is to have one nurse to assist in the work of inspecting all school children. Again Stockton shows more progress than some of our other cities.

At Chico a man walked into the city hall and casually announced that the doctor had told him he had smallpox. The city hall was promptly, but quietly, vacated. And then they say we do not need vaccination! If not, why do people run when they see a smallpox victim?

The Los Angeles "Examiner" begins an article this way: "American Medicine, which is devoted to the interests of the medical profession," etc. We had thought that "American Medicine" was exclusively devoted to promoting nostrums for the monetary gain of its owner.

Plague infected rats have been found in New Orleans and Philadelphia. Doubtless they exist in many other places but have not been found. The whole world is watching, with greatest anxiety, the spread of plague. A number of deaths have occurred in Porto Rico and Havana.

According to the Sacramento "Union," Dr. John W. Harvey, of Chico, was held for trial on the charge of committing a criminal operation upon a Mrs. Stabler whose husband is also under arrest for aiding in the operation. She alleges that her husband forced her to have it done.

In Los Angeles the motion picture men have banded with the "leaguers," the eddyites and the other freaks and quacks to oppose the sanitary ordinances issued to stop the epidemic of poliomyelitis. The edicts have hurt the motion picture business and, of course, business comes before health; dollars before lives.

"Child savagely bitten by mad dog." "Dog bites little girl; policeman kills brute." "Girl badly bitten by dog." "Many cases of rabies in San Mateo." "Palo Alto pound holds 60 suspected canines." "Instructive record of dog-bites at the bay." "Another dog mad; now muzzle yours." These are a few headings of newspaper articles. And yet a lot of people say it is cruel to muzzle dogs. Surely! let them bite your children.

IMPORTANT INFORMATION RELATING TO REPORTING INDUSTRIAL ACCIDENTS.

Dr. René Bine,
Secretary, San Francisco Medical Society,
916 Butler Building, San Francisco.

Dear Sir:

Your letter of May 10th gives this Board an opportunity to explain the circumstances under which the legislature passed the law in regard to reports of accidents by physicians.

A small appropriation, $15,000, was allowed for all statistical purposes connected with industrial accidents, of which about forty thousand occur annually in California. It was suggested that some recompense be given to physicians for sending in reports. The law, however, will be in effect for at least one year and a half. It would be impossible to give the material recompense for these sixty thousand reports, inasmuch as some of the appropriation is needed for the printing of reports, the mailing of the same, the salaries of the statistical department and the compilation of statistical material. It is obvious that the limited appropriation would not permit anything to be given to the physician, in spite of the opinion of individual members of the Board that such a step would be proper.

This law will remain in force at least until the end of June, 1913, inasmuch as new laws do not go into effect until ninety days after adjournment of the Legislature by which they are passed. The next Legislature will meet in January, adjourn during February, according to law, and resume sittings in March. This makes it probable that no change will be effective until the end of June. Such a change may be the repeal of the former act or a continuation of the reports, with a recompense of twenty-cents or so for every report filled. The Board cannot at this time promise to recommend such a change, but the physicians of the State can rest assured that the problem will be handled with appreciation for your viewpoint and your rights.

Physicians have, in many cases, questioned the right of the State to demand reports without

recompense. Under recent decisions, however, there is no doubt as to the constitutionality of acts demanding reports without recompense, provided that the information required by the Act is reasonably within the scope of knowledge of the physician. Barring unreasonableness, there can be no constitutional objection to such legislation.

There is no desire on the part of the Board to threaten physicians with the penalties mentioned in your communication. The Board recognizes that physicians, as the most intelligent and generally the most social-minded citizens, are anxious to aid the State to secure proper data for future legislation on this subject. Your co-operation is expected, not primarily because of legal necessity, but rather because of the intelligent attitude of your Society towards remedial legislation.

As a separate matter of interest, let me remind you that under the Employers' Liability Act (which is entirely separate from the act demanding reports), the employer is responsible up to the sum of one hundred dollars ($100.00) for medical care and attention incurred by or on behalf of an employee injured during the course of his employment. This applies only to those employers who have elected compensation.

For the use of the Society, I herewith submit a list of the more prominent employers who have elected to be bound under the compensation provisions of the act. Physicians should, where employees of these firms are injured in the course of their employment, protect themselves by sending the bills at once to the employer and looking to him for payment of the same.

Alameda Sugar Co.....San Francisco
American Olive Co.....Los Angeles
California Cotton Mills.....Oakland
California Stevedore & Ballast Co.....
..... San Francisco
City Electric Co.....San Francisco
Eagle Laundry Co.....San Francisco
E. I. du Pont de Nemours Powder Co...
..... San Francisco
Electric Laundry Co.....Los Angeles
Excelsior Laundry Co.....Oakland
Fresno Republican Pub. Co.....Fresno
Great Western Power Co...San Francisco
Linen Laundry & Supply Co..Los Angeles
Los Angeles Loundry Co.....Los Angeles
Los Angeles Packing Co.....Los Angeles
Madera Sugar Pine Co.....Madera
Magnet Steam Laundry.....Los Angeles
Munger Laundry Co.....Los Angeles
Mutual Laundry Co.....Los Angeles
New Method Laundry Co....Los Angeles
New Method Laundry Co..San Francisco
Noble Electric Steel Co....San Francisco
North Star Mines Co.....Grass Valley
Northern California Power Co., Cons..
..... San Francisco
Oakland Meat & Packing Co.... Oakland
The Northern Tanning Co..San Francisco
Pig & Whistle Co. of San Francisco....
..... San Francisco
Pig & Whistle Co. of Oakland...Oakland
Pacific Tel. & Tel. Co.....San Francisco
Panama-Pacific Int. Exposition Co.....
..... San Francisco
Puritas Laundry Co.....Los Angeles
J. P. Pyle & Son.....San Jose
The Record Publishing Co....Los Angeles
Richards-Nelstadt Construction Co.....
..... Los Angeles
San Francisco Laundry Association.....
..... San Francisco
San Pedro Lumber Co.....San Francisco
Sanitary Laundry Co.....San Francisco
Sawyer Tanning Co., The.....Napa
Sierra Railway Co. of California.....
..... Jamestown
Simon Newman Co.....San Francisco
C. A. Smith Lumber Co.....Bay View
Soft Water Laundry Co.....Long Beach
Standard Lumber Co.....Sonora
Standard Oil Company.....San Francisco
Swift & Co.....San Francisco
Troy Laundry Co.....Los Angeles
Union Sugar Co.....San Francisco
University of California.....Berkeley
Western Laundry Co.....Los Angeles
Western Meat Co.....San Francisco
Zellerbach Paper Co.....San Francisco

This Board will be pleased to co-operate with the Medical Society in every possible manner.

Yours very truly,
AARON L. SAPIRO,
Secretary.

According to the local press of June 5th, the following employers of labor have elected to come under the workmen's compensation provisions of the Roseberry law:

Burk Bros.
Feather River Power and Irrigation Co.
F. Thomas Parisian Dyeing and Cleaning Works.
National Lead Co.
Plumas Investing Co.
Western Exploitation Co.

On July 18th, the following additional list of employers who have accepted compensation was received from the Secretary of the Industrial Accident Board:

La Grande Laundry.....San Francisco
Fleishhacker Paper Box Co..San Francisco
Western Paper Box Co.....Oakland
Natomas Consolidated of Cal., San Francisco
Mervy-Elwell Co.....Oakland
Earl Orchard Co.....Los Angeles
New Method Laundry Co.....Stockton
General Petroleum Co.....San Francisco
Pacific Wakefield Co.....San Francisco
Maricopa Nat'l. Petroleum Co....Fresno
Enterprise Laundry Co.....Santa Clara
Ontario Laundry Co.....Ontario
Sunset Door & Sash Co.....Stockton
Spreckels Bros. Commercial Co.....
..... San Diego
Enterprise Laundry Co.....Santa Barbara
Foucar, Ray & Simon.....San Francisco
General Construction Co....San Francisco
Pacific Electric Heating Co..San Francisco
Oroville Gold Dredging & Exploration Co..... San Francisco
Schmidt Lithograph Co....San Francisco
Mammoth Copper Mining Co. of Maine
..... San Francisco
The Yuba Construction Co.....
..... San Francisco

CHANGES OF ADDRESS.

Fitzgerald, W. W., from 38 So. California St., Stockton, to Elks' Bldg., Stockton.

Laughlin, C. B., from address unknown to 268 Market St., San Francisco.

May, Wm. H., from Montgomery Creek, Cal., to ?.

Frizell, J. P., from Yreka to San Francisco, Cal.

Petch, Philip H., from San Francisco to La Moine, Shasta Co., Cal.

Cross, Hugh, from Lincoln, Cal., to Sisson, Cal.

Crawfis, G. A., from Smith River to Los Angeles, Cal.

Wolfe, H. H., from San Francisco, Cal., to Albion, Mendocino Co., Cal.

Riley, J. A., from 1437 Oak St., Alameda, to 1430 Park St., Alameda.

Ball, S E., from Elsinore to Los Angeles.

Hewetson, Jno., from Riverside to ?

Sawyer, E. H., from Riverside, Cal., to Wendling, Cal.

Scott, H. H., from Riverside to ?

Thompson, Wm. H., from Riverside to ?

Tilden, A. D., from address unknown to Riverside, Cal.

Ware, C. D., from Cedarville to Bodie.

Converse, Geo. M., from San Francisco to Iquitos, Peru.

Hall, Geo. E., from Palo Alto to Long Beach.

Reynolds, L. G., from Ochsner Bldg., Sacramento, to 719½ K St., Sacramento, Cal.

Massie, A. M., from Berkeley to 995 Market St., San Francisco, Cal.

Minaker, A. J., from 146 Grant Ave., to 995 Market St., San Francisco.

Garner, R. W. T., from Sierraville, Cal., to Susanville, Cal.

Hamilton, I. B., from Los Angeles to Orosi, Cal.

Banks, W. H., from 4402 California St., to 135 Stockton St., San Francisco.

Pritchard, M., from Nevada to 806½ J. St., Sacramento.

Kelsey, J. E., from 2162 Vine St., Berkeley, to Acheson Bldg., Berkeley.

Greth, August, from Los Angeles to Oakland, Cal.

Jardarola, R., from San Francisco, to Los Banos, Cal.

Mitchell, C. O., from Laton to Fowler, Cal.

Thorwick, Martha, from 498 Duboce Ave., San Francisco, to 450 Duboce Ave., San Francisco.

Caldron, E., from 809 Turk St., San Francisco, to 561 Hyde St., San Francisco.

Schmelz, C. J., from Eaglesnest, Cal., to 56 Redwood Ave., Rionido, Cal.

Keegan, L. T., from 614 5th St., San Diego, to 965 5th St., San Diego.

Sponogle, F. M., from 821 Market St., San Francisco, to 508 Merchants National Bank Bldg., San Francisco.

Krebs, Otto F., from San Francisco to Thayer Bldg., Oakland.

Artiques, J. E., from 205 Montgomery Ave., San Francisco, to 203 Columbus Ave., San Francisco.

Lamb, S. L. Halverson, from 261 8th Ave., Oakland, to 4311 Haley Ave., East Oakland, Cal.

Clark, E. M., from 526 25th St., Oakland, to Oakland Bank of Sav. Bldg., Oakland, Cal.

Caesar, Wm. J., from Pillow Blk., Richmond, Cal., to 7th and McDonald Ave., Richmond, Cal.

Graham, Richard Watson, from 607 So. Hill St., Los Angeles, to Consolidated Realty Bldg., Los Angeles, Cal.

Thorpe, T. F., from McKittrick to San Juan, Cal.

Miner, W. D., from Smartsville, Cal., to Oakland, Cal.

Mackerras, R. H., from 154 W. Central Ave., Sierra Madre to Los Angeles Investment Bldg., Los Angeles, Cal.

Gould, N. B., from Gonzales, to Monterey.

Bowerman, A. C., from El Monte, to ?

Donnelly, E. F., from San Francisco, to Napa State Hospital, Napa, Cal.

Cook, W. H., from Hot Springs, to McKittrick, Cal

Verrinder, H. F., from Redlands, to 3008 Duncan St., Berkeley, Cal.

Trew, N. C., from Los Angeles, to R. F. D. No. 11, Box 249 Highland Park, Los Angeles.

Clark, F. P., from State Hospital, Stockton, to P. O. Box 494, Stockton, Cal.

Fitzgerald, W. W., from 38 S. California St., to Box 113 Stockton, Cal.

Higgins, I. W., from First National Bank Bldg., Berkeley, to Elks Club, Berkeley, Cal.

Nichols, H. L., from 426½ J. St., Sacramento, to 909 F St., Sacramento.

Hovt, H. F., from 332 W. 2nd St., Long Beach, to 332 W Broadway, Long Beach, Cal.

Frates, F. E., from 593 8th Ave., San Francisco, to 602 5th Ave., San Francisco.

McNaught, H. Y., from 1720 Pacific Ave., San Francisco, to 135 Stockton St., San Francisco.

Reis, H. W., from 1346 Webster St., San Francisco, to 995 Market St., San Francisco.

Pendergrass, W. C., from Ceres, Cal., to Le Grand, Cal.

Toner, J. M., from 2396 Folsom St., San Francisco, to 16th and Folsom St., San Francisco.

Krebs, E T., from Bridgeport, Cal., to Carson City, Nevada.

Guinan, Wm. J., from Orcutt, to Smartsville, Cal.

Bryan, Eugene H., from San Diego, to Chula Vista, Cal.

MacKechnie, C. A., from 130 Girard St., to 523 Natoma St.

Pritchard, M., from Tonopah, Nevada, to Sacramento, Cal.

Barney, T. R., from 1219 Broadway, Oakland, to 1429 Broadway, Oakland.

Woodward, A. P., from 312 Haight St., San Francisco, to 690 Oak St., San Francisco.

Kilgore, E. S., from Berkeley to Affiliated Colleges, San Francisco.

Adams, C. E., from Santa Clara, to Mt. View, Cal.

Cushman, R. A., from Santa Ana, Cal., to Bridgeport, Cal.

Dawson, B. F., from San Luis Obispo, to Corning, Cal.

Austin, S. A., from Pantages Theatre Bldg., Los Angeles, to 427 Temple St., Los Angeles.

Gleaves, C. C., from Coalinga, to 945 S. Olive St., Los Angeles.

Craig, M. A., from Oakland, to Lakeport, Cal.

Lilley, J. F., from Oakland, Cal., to 923 Forester Ave., Albuquerque, N. M.

Pope, Emma Wightman, from Watsonville, Cal., to 453 Shrader St., San Francisco.

Parish, H. L., from 1124 8th St., Oakland, to 1136 8th St., Oakland.

De Puy, C. A., from Portola to ?

Weber, P. H., from Elmhurst, Cal., to 9713 E. 14th St., Oakland, Cal.

Stallings, F. L., from Lindsay, Cal., to New Harmony, Ind.

Stephens, C. P., from Pinole, to Durham Cal.

Fales, L. H., from addresses unknown, to Clifton, Arizona.

Plumb, Clara B., from Nevada to 920 Figueroa St., Los Angeles.

Nusbaum, Adolph, from 865 Fillmore St., San Francisco, to traveling abroad.

Pope, S. T., from Watsonville, to 135 Stockton St., San Francisco.

Pring, Ernest, from Berkeley to 1373 Broadway, San Francisco.

Gladding, C. F., from Oakland, to Folsom (Prison Physician).

NEW MEMBERS.

Rulison, E. T., Sacramento.
Goodale, R. H., Manteca, Cal.

DEATHS.

Jackson, Craven, Los Angeles.
Field, H. M., Los Angeles.
Walker, Hugh, Elsinore, Cal.
Hannah, J. B., San Francisco, Cal.
Filmer-Carson-Gruver, Olive F., San Francisco.
Armstrong, Geo. C., Los Angeles.
Keck, John, Camp Meeker.
Jackson, Henry, Likely, Cal.
Jadarola, L. B., San Francisco.
Fatjo, Luis, Volta, Cal.
Johns, S. P., Loyalton, Cal.

California State Journal of Medicine.

Owned and Published Monthly by the

Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor

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ADDRESS ALL COMMUNICATIONS

Secretary State Society, - -
State Journal, - - -
Official Register, - - -
Butler Building, San Francisco.

Telephone Douglas 2537

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. X OCTOBER, 1912. No. 10

EDITORIAL NOTES.

THE PEOPLE WILL SUFFER.

Unless all present indications are wrongly interpreted, the people of the State of California will be left with little if any public health protection after the next session of the legislature adjourns. There will possibly be an appropriation to carry on the plague work among squirrels, but this will be due to pressure from the Federal Government, if it is made at all. In the legislature will be a large number of legislators who are closely in touch with the eddyites and the "league for medical freedom." The hold-over senator who is considered the leader of the Southern California delegation, Gates, is a member of the advisory board, or whatever they call it, of the "league"; a prominent eddyite in Los Angeles has been nominated and will undoubtedly be elected; a number of other eddyites are also nominated or hold-overs. The attorney for a notorious quack in Oakland has been nominated and will be elected; he has already announced that he "is not going to do a thing" to the medical law! The present vaccination law will probably be repealed and it is possible that smallpox will be made only a reportable disease and not quarantinable. A number of persons have announced the intention to pass a reciprocity amendment that will practically mean no safeguard to the public; that any quack anywhere may come here and get a license. The crazy, unreasoning, fanatical opposition to anything that partakes of the nature of public health control, and which had its origin some four years ago, has grown tremendously. It looks very much as though the people would have to take their dose of medicine before they can recover from the disease of unreason. It will not be a pleasant dose to take, but it may be the quickest way to get over the disease. A real good epidemic of smallpox and a considerable increase of rabies and poliomyelitis, with no attempt at control or quarantine, might help somewhat. If we, as a profession, undertake to oppose this movement actively, we at once make it worse, for those whose interests are against public health measures immediately cry out that the "doctors' trust" has been hurt and is fighting to get something. They cry so loud and so long that the unreasoning people believe them; the general run of people can not see where unrestricted disease hurts themselves and benefits (financially) the medical profession. About the only thing that it seems possible to do is to keep high standards in our medical societies; make careful inspection of applicants for membership; bring the members into closer harmony and greater scientific work; in general, make membership in a county medical society mean a badge of professional ability and standing. The unthinking run of people have been fooled into worshiping false gods; they will elect politicians who will betray the health interests of the people by destroying all the protective legislation that they can. But at least we can do something to preserve our own self-respect and our respect for our profession by active work in our medical societies and by keeping them clean, free from petty graft and from all other things for which we might have cause to be ashamed and by raising higher the standards required for admission. Make membership in a county medical society something for the thinking people to look upon as a badge of professional ability and respectability.

See advertising page xxvi of this issue for a special notice that will be of interest and value to you.

DOES IT PAY?

A subscriber in Nevada wanted something that he could not get in the local drugstore. What did he do? He looked through the advertising pages of his STATE JOURNAL, found the advertisement of a large druggist in San Francisco, wrote to that pharmacy and by return mail had what he wanted. Does it pay to use your own JOURNAL as a means for locating the firm that has what you want to buy? Does it pay to use it as a means of notifying others of what you want to sell? Does it pay to co-operate? In the last few months a number of advertisers have voluntarily and without solicitation, increased their space in the JOURNAL; would they do it if it did not pay them? Hardly. It pays them and it will pay you. The advertising pages of a properly conducted publication are at least as valuable as the reading pages. The State Society is using the advertising pages of the JOURNAL and with astonishingly good results. In this issue, on page XXVI there is an announcement from the State Society that will be of distinct value to you.

JOKER IN DRUG BILL.

It was thought that the so-called Shirley bill, passed by the last Congress and approved by the President, would be a sound patch over the hole which the supreme court knocked in the Food and Drugs Act. You will recall the fact that the court decided that false statements on the label of a patent medicine applied only to the composition and not to statements as to the powers or value of the remedy. The Shirley bill refers directly to "false and fraudulent" statements in regard to claims for the remedy. Dr. Wiley says that this is a joker. He says that the courts will hold that the words go together and that it must be proved that any statements on the label referring to the actions of the remedy, or claims for its powers, are both false *and* fraudulent, not either one or the other; the difficulty will be that it will now be necessary to prove two different crimes instead of one. Dr. Wiley may be correct; he certainly knows the crookednesses of that patent medicine game and the various sorts of frauds that can be worked. It looks as though the public had been sold another gold brick by Congress!

QUESTIONABLE ASSOCIATES?

The *New York Medical Journal* is owned and published by the A. R. Elliott Publishing Co., of New York; it is a medical (?) journal published for the profit of the owners. In the issue of August 31st, 1912, we find the following nostrums advertised: Papayans; ammonal; resinol; katharmon; peptomangan; dioxogen; afsal; asphen; iodomuth; antiphlogistine; papine; tri-iodides; maizolithium; unguentine; bovinine; glycothymoline; listerine; lythol; camphosorcin; phenalgin; peacock's bromides; chionia; salhepatica; ergoapiol; respirazone; micajah's wafers; campho-phenique. In the same number of this most respectable medical (?) journal which gladly takes the money from these more or less disreputable nostrum advertisements—and in the list you can find some that have been repeatedly shown up as frauds of the rottenest kind—in the same number we find an article on "Blood Pressure in Pulmonary Tuberculosis," by Dr. Francis M. Pottenger of Monrovia, California. Dr. Pottenger, stop and think about it. Will we ever make headway against this flood of rottenly dishonest nostrums so long as men like you, of your standing in our community, will contribute articles to a publication that will fatten itself on corruption and dishonesty in its advertising pages? Why, even the religious publications are beginning to be ashamed of themselves and hard up for contributors! The *Ohio State Medical Journal*, published by the Ohio State Medical Association, in its August issue, contains the following nostrum advertisements: Gray's tonic; fellow's syrup; peptomangan; ergoapiol; glycothymoline. In the *Medical Review of Reviews*, for August, we find a contribution from Dr. Chas. D. Lockwood, of Pasadena, California, and the following nostrum advertisements: Gray's tonic; resinol; laxol; ergoapiol; dioradin; afsal; asphen; iodomuth; peptomangan; palpebrine; glycothymoline; hayden's viburnum; anasarcin; katharmon; bovinine; sanatogen (shown up by the A. M. A. quite recently); formamint; neurilla; pond's extract; sanmetto; respirazone; cactina; seng; peacock's bromides; chionia; anademin; aletris cordial rio; phenalgin; antiphlogistine; salhepatica. The publishers print a wonderful "platform," built after the same lines as the "league for medical freedom" stuff. We mildly suggest to them that the above mentioned things are nostrums and that a self-respecting publication would not advertise them. Undoubtedly Dr. Chas. D. Lockwood has either never seen a copy of the publication, or has never looked through its advertising pages, or he would not have allowed his name to appear as a contributor to a publication that will participate in the profits of such nasty graft.

FOURTH OF JULY.

The report of accidents occurring on the "glorious Fourth" of 1912 appears in the issue of the *Journal A. M. A.* for September 7th and is a most remarkable document; it shows very forcefully what education and publicity will do toward the correction of an evil and vicious waste. The reduction in the number of cases of tetanus from 466 to 6, is almost too good to be true; yet the figures have been most carefully compiled and corrected. The cry for the "safe and sane Fourth" was started by the Association some years ago; and for some additional years the members of the Association and the readers of the *Journal* were the only ones who paid any attention to it. Slowly but surely the weight of the facts presented and sent to the newspapers made itself felt and appreciated in newspaper offices. Then the public began to take an interest in the needless slaughter of its children and the active reform was on. This is undoubtedly one of the most valuable undertakings of the Association's many large and public-spirited enterprises; it should particularly appeal to the ordinary citizen, who thinks in dollars and cents, when he stops to consider the enormous amount of destruction from fires in the old days and the almost total absence of fires now. In a large number of cities there was not a single fire due to fireworks this year. The amount saved in dollars, by this work of the Association, would run up into the millions. Has the Association a good excuse for existence?

A WORD ON CRITICISM.

A witty Frenchman has defined criticism "as the art of telling another how he ought to have done what you could not do yourself." Now in the minds of most of us criticism is synonymous with faultfinding, withal Mathew Arnold defined it, if our memory be not at fault, as "the effort to recognize and direct attention to whatever is best and most beautiful in the world about us." These definitions are diametrically opposed to one another and yet according to different viewpoints each has somewhat of truth in it. We are indeed prepared to accede to all of them and then some! As a matter of

fact we abhor definitions. It seems to us that only the intellectually lost would voluntarily consent to a curtailment of intellectual horizon through adhesion to any definition of an abstract subject. The simplest and homeliest things admit of divers and most complex definitions. Consider, for example, the simplest concrete object which occupies space; namely, the pyramid. It presents but three sides and a base, and yet, depending upon the points from which it is viewed it admits of four separate definitions. How unprofitable a thing then must be any attempt to define criticism.

S. N. I.

"SEND THE STICKERS."

In the September issue of the JOURNAL appeared an article by Dr. Kress, Secretary of the Los Angeles Association, giving an account of the experience of their County Association in trying to start a collection bureau. That phase of the work they found unprofitable. But they did find that a set of slips, printed on gummed paper, each slip carrying a sentence or two calling attention to an account overdue, the slip to be pasted on the bill and sent to the debtor, brought excellent results. It seemed to be so promising that the Council of the State Society ordered a number of sets of these "stickers" or "pasters" printed for the general use of members of the State Society. It was announced in the September issue that a set of stickers would be sent to any member who would send a request for them to the Secretary, Dr. Philip Mills Jones, Butler Building, San Francisco. Within a week after that number of the JOURNAL had been issued, over a hundred requests for sets of stickers had been received and every mail brings more such requests. Evidently there are a number of members and subscribers who read their JOURNAL about as soon as it reaches them, which is certainly encouraging. There are still plenty of these slips on hand and a set will be sent to any subscriber or member who will take the trouble to send a request for them to the Secretary, Dr. Jones. You will find that they will be a material help to you in collecting slow accounts. Send for a set to-day and try them.

MAZDAZNAN EXTENSION.

We are in receipt of a most entertaining circular letter headed (in typewriting) "Mazdaznan University, San Francisco Section, O. Thummel, Principal." It is addressed to a member of the Society and announces the soon-to-be-given course of very exclusive lectures to physicians only. The course of lectures consists of six and the price is only $40.00. The document is quite too long to quote in full, but it certainly is an amusing piece of charlatanism and ignorance mixed with an acute perception of the truth of Mr. Somebody's remark that there is a sucker born every minute! "In our last lesson we will give some revelations of the possibilities of curing diseases which, even to-day, are considered incurable by conscientious physicians." One can not but wonder how many people are caught by such a suggestion as this, for example: "We are also giving private instructions to doctors on some of the vital sex questions: How to prolong the act of intercourse without waste of sex fluids." The circular also states that "During our absence enrollment will be attended to by our friend Dr. E. H. Mattner." On looking the matter up it is found that Dr. E. H. Mattner is given as a member of the San Francisco County Medical Society. "O. Thummel" does not appear to be recorded in the books of the Board of Examiners.

MEDICAL EDUCATION IN EUROPE. THE CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING, 1912.

This report on Medical Education in Europe also comes from the pen of Mr. Abraham Flexner who has given us such a vivid and on the whole accurate description of the condition of medical education in our own country. The report embodies an enormous amount of information, carefully digested and presented in admirable form. To one who is really interested in medical education I cannot imagine more instructive reading. The conditions in Germany with which the reviewer is more familiar are presented in an excellent manner. The amount of insight displayed into a method of education so thoroughly different from our own is truly wonderful, especially when the short time devoted to this study is taken into account. There are of course many points which are debatable but on the whole Mr. Flexner brings out very strongly the advantages and the disadvantages of the German system. It is weak in some respects in the teaching for the average student, but for the best it is almost an ideal one. It is to be hoped that our country will profit from the experiences of others and in due time will develop an American system of medical education based on German ideals tempered with more compulstory practical instruction in laboratories, clinics and hospital wards following in this regard to some extent the methods so admirably developed in Great Britain and France.

W. O.

THE SKIN REACTION IN SYPHILIS.

The diagnostic possibilities offered by the Noguchi "luetin" cutaneous test are becoming more apparent with increased experience. At the recent annual meeting of the American Dermatological Association the matter was discussed and clinicians from different parts of the country gave the results of their brief experience with the new test. From the few hundred cases so far observed, it appears that the test has some value in manifest tertiary and latent cases, in which conditions it is positive more often than the Wassermann reaction. If it proves to be of assistance in those

cases in which the complement fixation test fails, then it will be of great value. It also seems to have some value in a negative way, that is, so far it has not given well marked reactions in non-syphilitic cases. In the early and secondary phases of lues it does not seem to give consistent results; but in these stages further diagnostic assistance is not needed as much as in tertiary and latent tertiary cases and in the so-called parasyphilitic conditions. The results of this investigation so far are sufficiently encouraging to warrant continuing the work and during the year clinical investigators in various parts of the country will carry it on. More work will be pursued in the direction of determining the possible value of the test in tabes, general paralysis and other parasyphilitic states. Before the value of luetin can be definitely placed very many more control tests will have to be made.

Through the kindness of Noguchi some luetin and some "control emulsion" have been sent to the Stanford University Medical Department and the writer has been using the same in the skin clinic. The procedure is as follows: One-tenth of a cubic centimeter of a diluted suspension of pure culture of the treponema pallidum, killed by heat ("luetin"), is slowly injected intradermically. At the same time a corresponding amount of the uninoculated culture medium is injected elsewhere as a control. Clear cut positive reactions, as observed by the writer, may be described as follows: At the site of the luetin injection within a day or two there appears a small inflammatory spot which becomes indurated. The induration and redness increase during the first few days until the lesion appears as a deeply seated indurated nodule involving the entire thickness of the skin. Seldom does it declare itself fully before the third day. When fully developed, the nodule may be from the size of a small pea to two or three times that size, and distinctly inflammatory in character. Inflammation and induration are essential features. At times the reaction appears very early and occasionally it is delayed. It gradually subsides in the course of the following two weeks and disappears, often leaving a small pigmented spot. There are variations from this picture and sometimes the inflammatory nodule is surrounded for a short distance by a definite red zone. The control injection usually shows some redness which occasionally is rather marked, but it is not as pronounced as that seen in the luetin reaction. It subsides earlier and at a more rapid rate than the latter. After observing the two for a number of days there is no difficulty in distinguishing the one from the other.

It is the belief of those who have been carying out this test that it may prove to be of real value in those cases where aid in diagnosis is so often needed, namely, tertiary syphilis and parasyphilis.

HARRY E. ALDERSON.

SPECIAL REPORT ON POLIOMYELITIS

EPIDEMIC POLIOMYELITIS IN LOS ANGELES.

By THOS. J. ORBISON, M. D., Los Angeles.

In the week ending Saturday, June 15th, one case of poliomyelitis was reported to the Health Office of Los Angeles. In the next seven days, seven new cases were reported. Eleven cases were reported in the seven days following. The next two weeks totaled thirty-four and twenty-five new cases, respectively. Practically all of these cases were reported from the southeastern section of the city, and were grouped, roughly, along both sides of the river bed. It transpired that in a certain adjacent extra-urban district there were several cases of poliomyelitis, and it was reasonable to suppose that it had spread to Los Angeles along the lines of human travel. Also, it was fairly well confined to the district of the city where many of the city streets had never been watered, and where the hygienic conditions of the inhabitants were bad.

Thus, it was apparent that an epidemic of poliomyelitis was in progress. Realizing that the duration of any epidemic that flourishes in the dry and dusty months, when refuse and decaying vegetable and animal matter, and other filth, is exposed longest and in greatest amounts, when various suspected carriers were most prevalent, the Health Commissioner of Los Angeles, Dr. L. M. Powers, stated the situation to Acting Mayor Williams. The Mayor, at Dr. Powers' request, called a meeting of physicians, clergymen, laymen, and women, on the evening of Friday, July 19th. The whole subject was discussed. The chief result of this meeting was that a committee was appointed by Acting Mayor Williams to act as an advisory board with the Health Commissioner. Its functions were to obtain all necessary data, advise with the Health Commissioner on one hand, and Councils on the other.

This committee organized itself into working units directly after the adjournment of the first general meeting. Its first business meeting was July 27th. The chairman, Dr. H. G. Brainerd, appointed two sub-committees—(1) a hospital committee and (2) publicity committee. The first was to take steps to equip a suitable hospital to care for the cases that could not be cared for properly at home. The members of this important and efficient committee were Drs. W. LeMoyne Wills, Cas. B. Nichols, and Rev. R. L. Windsor. They viewed various sites, and selected a suitable one on a hillside, not remote from the center of the city, but entirely isolated. The building must

be remodeled, renovated, painted, screened, and entirely furnished, as it was not serviceable in its present condition. To effect such a reorganization there were no funds. The central committee met with Mayor Alexander and the Council August 3rd, to state the needs of the situation. Four things were asked: (1) A twenty-four-hour quarantine; (2) Funds to equip the hospital; (3) An auto ambulance; (4) Sprinkling or oiling of all streets.

These requests were granted, and the Council pledged itself to back up the committee with funds and moral support. With this assurance the Hospital Committee at once took measures to establish a completely equipped, modern hospital, from the chaotic materials at hand. It is sufficient to say that between August 3rd and August 12th this was done, and the first case admitted into a smoothly-running hospital, where efficient nurses were prepared to receive and care for infected cases. Up to August 29th there have been seven cases admitted.

The Publicity Committee was appointed by the chairman to meet the panicky state of mind of the community, with prepared statements of advice as to what the disease really was, how best to institute prophylactic measures, and how to aid the Health Commissioner in his campaign. The newspapers, with two exceptions, offered their columns for the committee's use. This action was of the greatest help in allaying the panic that was increasing rapidly. The thanks of the community are due the *Record, Herald, Times,* and *Examiner* for their great help in giving instruction to the people and the truth as to the real facts.

The members of the Publicity Committee were Rev. R. L. Windsor (in whose parish a large percentage of the cases were), Drs. Wills, Jeters and Orbison. Dr. Jeters is an osteopath, who volunteered his services and who has done efficient service.

The twenty-four-hours' quarantine went into effect August 6th, also the additional sprinkling of streets, and care as to garbage and refuse. From the recorded figures (vide tables appended), it would seem that the quarantine measures, together with the street sprinkling, and more rigidly enforced hygiene, have been responsible for the sudden decrease in the number of new cases.

As to the quarantine, it was a rigid day and night isolation of all infected houses and their inmates during a period of thirty days from the date of the beginning of the illness. The regulations provided that the wage earner should either remain in quarantine with other members of the household, or be allowed to remain outside during the period; but that he or she should not go in or out at will. To effect an enforcement of the regulations, a day guard and night guard were placed before the infected houses and the placard, "Poliomyelitis (Infantile Paralysis)," was tacked up in a conspicuous place. Another prophylactic measure affecting the public that was recommended, was the closing of Sunday-schools, playgrounds, picnics, picture shows, etc., to children under fifteen years of age.

Of course, it is too early to make any satisfactory tabulations, as the epidemic may be only in abeyance.

The following tables were compiled by the Health Office, up to and including the week ending August 24th:

Record of cases and deaths. Week ending June 15, 1912, 1 case, 1 death; June 22, 7 cases, 1 death; June 29, 11 cases, 2 deaths; July 6, 34 cases, 6 deaths; July 13, 25 cases, 5 deaths; July 20, 29 cases, 3 deaths; July 27, 41 cases, 8 deaths; August 3, 29 cases, 6 deaths; August 10, 27 cases, 9 deaths; August 17, 21 cases, 2 deaths; August 24, 12 cases, 2 deaths. Total, 237 cases, 45 deaths.

Record by ages. Under 1 year, 22 cases, 6 deaths; 1 to 2, 49 cases, 8 deaths; 2 to 3, 48 cases, 6 deaths, 3 to 4, 28 cases, 4 deaths; 4 to 5, 22 cases, 8 deaths; 5 to 10, 33 cases, 8 deaths; 10 to 15, 14 cases, 4 deaths; 15 to 20, 5 cases, 1 death; 20 to 25, 1 case; 25 to 30, 1 case; 30 to 35, 2 cases; 35 to 40, 1 case; 40 to 45, 1 case; 45 to 50, 1 case; age not recorded, 9 cases.

Record by sex. Cases, male 126, female 107; not recorded 4; deaths, male 29, female 16.

Quarantine, as in diphtheria, without guards, was instituted with the first case, but since August 6th strict isolation with guards day and night, as in smallpox, has been maintained.

A municipal hospital was opened August 12th; and, on August 17th, 4 cases had been received. Patients are recommended for admission for protection of other members of the family, or neighboring families, when strict isolation is difficult.

Cases reported by week:

Week ended June 15	1
" " " 22	7
" " " 29	11
" " July 6	34
" " " 13	25
" " " 20	29
" " " 27	41
" " Aug. 3	29
" " " 10	27
" " " 17	21
" " " 24	12
To Aug. 27th inc.	2

Released from Quarantine:

Week ended June 15	0
" " " 22	1
" " " 29	3
" " July 6	12
" " " 13	14
" " " 20	3
" " " 27	25
" " Aug. 3	26
" " " 10	27
" " " 17	37
" " " 24	33
To Aug. 27th inc.	7

Cases in Quarantine by weeks:

Week ended June 15	1
" " " 22	7
" " " 29	15
" " July 6	36
" " " 13	48
" " " 20	104
" " " 27	90
" " Aug. 3	93
" " " 10	93
" " " 17	77
" " " 24	56
To Aug. 27th inc.	51

ORIGINAL ARTICLES

SYMPOSIUM ON THE WASSERMAN REACTION AND SALVARSAN TREATMENT IN SYPHILIS: CONCLUDED.

SALVARSAN IN OBSTINATE LATE SYPHILITIC LESIONS OF THE PALMS, SOLES, AND MUCOUS MEMBRANES OF THE MOUTH*

By DOUGLASS W. MONTGOMERY, M. D., San Francisco

Salvarsan is passing through the same phases as every good new remedy. Used at first for all the manifestations of syphilis at any stage, and praised as an unfailing cure, it is gradually taking its place with the other great specifics, mercury and iodid of potash, to be given either as part of a general course, or to combat special lesions uncontrollable by its fellow remedies.

The two special sets of lesions that we wish to discuss in the present paper are the late recurrent herpetiform mucous patches of the mouth, and the late squamous syphilides of the palms and soles that are so frequently miscalled syphilitic psoriasis.

No fair minded observer can question the fact that salvarsan acts specifically against syphilis, and it is probable that it does so as a parasiticide to the spirocheta pallida, in a manner analogous to the action of arsenophenyl-glycin on the tripanosomes of tripanosomiasis. It is equally clear that salvarsan acts powerfully on the patient as well as on the disease, and especially powerfully on the epithelial structures and on the nerves.

In many instances, in fact, its selective action is so powerful and so beneficent that it has been suggested that salvarsan is not parasitotropic at all, and that the good effects observed when given in syphilis are from this powerfully tonic action.[1] This cannot be true as it sometimes produces anemia, and is depressant, and yet acts specifically in clearing up syphilitic manifestations. Fox and Trimble report a case of a serpigenous syphilide where this happened,[2] and I have seen it clear up an obstinate squamous syphilide of the palms while producing anemia and debility.

The stimulating effect of salvarsan on the skin is seen in the way it causes eruptions such as urticaria, and erythemas that may simulate the rashes of measles or of scarlet fever. Its administration is also sometimes followed by herpes zoster, and herpes simplex, and in one case reported by S. Watenabe and Y. Fujitani there was simultaneous pruritus of the palms and soles,[3] showing the stimulating action of the drug on the nerves.

Palmar and Plantar Syphilides, and Their Treatment with Salvarsan. The palmar and plantar syphilides offer, as is usual with syphilitic lesions, a variety of forms. There is the spotted macular eruption that occurs as a symptom early in the disease, that usually causes no trouble whatever, barring the disfigurement, and that clears up in a few weeks without treatment, or in a much shorter time with treatment. There is no special indication for giving salvarsan in this manifestation. If the drug is given at the time of the appearance of this eruption it is administered as a general antisyphilitic, and as such is of undoubted value, but is not as valuable or as free from the chance of diagreeable by-effects as mercury.

As a late secondary eruption there may appear brownish yellow papules on the palms with active desquamation. They disappear by flattening out into desquamating discs. They may cause some cracking, but do not usually give rise to much inconvenience. This eruption is usually easily controllable by the ordinary antisyphilitic remedies, and does not offer a special indication for giving salvarsan.

Gummata may occur in the palm as elsewhere, and when they do appear in this locality they are as amenable to the combined action of mercury and iodid of potash as in any other situation. When salvarsan is given we would expect it to act specifically and beneficently, but we would not expect it to have any special advantages over the other two drugs.

The desquamative syphilides of the soles and palms, that are at times so refractory to treatment by mercury and iodid of potash are late lesions, sometimes appearing twenty or more years after the initial sore. They frequently are unilateral, affecting only one hand or one foot, and this in itself constitutes a valuable diagnostic feature. Sometimes the affection is very superficial, consisting of patches of desquamation that are disagreeable because of their dryness, their roughness, and because of continually reminding the patient of the presence of his malady. At other times they desquamate down to the quick, and there may be infiltration of the corium, which makes the skin less flexible, and therefore apt to crack. The cracking and the consequent pain and tenderness may be so severe as to lame the hand. A patch may start in the hollow of the hand, spread peripherally, and at the same time heal in the center. In this way a desquamative band may be formed, progressing slowly across the palm, and invading the volar surfaces of the digits. If the band, which is a segment of a circle, invades the digits it maintains on each digit the same relative distance from the center, so that when the fingers are approximated with the hand open the section of the band that is on the volar surface of each finger fits its neighbor, and so goes to form a continuous band. The band is usually made up of a number of segments of smaller circles, so that it is festooned and tends to assume the same general shape that an apple peeling does when thrown on the floor. The whole peeling tends to fall in a circle, made up of the segments of a great many smaller circles.

This band, as above indicated, may be simply desquamative, or under the desquamation there may be demonstrable infiltration of the true skin.

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

This infiltration may be so marked as to raise the outer advancing edge of the band into a distinct wall, constituting a valuable diagnostic sign.

The dermal infiltration in some cases, instead of being a wall, is made up of brownish foci arranged in a segment of a circle. This is the late tubercular syphilide, each tubercle being a minute gumma. When these tubercles are present, or when the above mentioned infiltrated wall is well marked, the diagnosis is comparatively easy, but under ordinary circumstances the correct interpretation of desquamative conditions in the palm is one of the most puzzling in dermatology. And their treatment when obstinate to mercury, which happens comparatively frequently, was correspondingly exasperating. Under a vigorous mercurial treatment they may disappear, only to reappear when the treatment is stopped. This game of hide and seek may go on indefinitely to the continued disgust of the patient, and the intermittent disgust of the different physicians that treat it. A particularly intense treatment, especially by calomel injections, may definitely clear up such a palm, but the marvelous way in which the lesions fade, and the palm returns to a perfectly normal condition, is one of the most notable achievements of salvarsan.

That the chief reason for the action of salvarsan on lesions of the palms and soles lies in its specifically antisyphilitic action admits of no doubt. The change from disease to health is too rapid and too thorough-going to admit of any other explanation. It is also, however, likely that the arsenic in salvarsan acts selectively on the epidermal cells, influencing them to return to their normal functions.

There is yet another reason why salvarsan should act well in these lesions. Most of these patients have taken large quantities of mercury and iodid of potash, and it is probable that both their tissues and the spirochetes have acquired a tolerance for these drugs. The new drug, salvarsan, is given, and neither the patient's tissues nor this particular strain of spirochetes are accustomed to it, and they are both taken by surprise.

Although salvarsan acts so brilliantly in these late obstinate lesions of the palms and soles, we cannot yet say that the lesion will not reappear. In fact in one of our patients the eruption did reappear, but not in nearly such a deep seated or painful a form. It reappeared as small areas of superficial desquamation, such as is sometimes seen in people who are not syphilitic, but who have a seborrheic skin, such as this man had.

It is particularly fortunate that a remedy has been discovered for these palmar lesions, as there are no syphilitic manifestations we meet with, not even the excessively painful tabes, that so frequently lead patients to think of suicide. They become morose and imagine everyone sees their disfigured palms. That it is not the disfigurement, however, nor the inconvenience that gives rise to this melancholy mental attitude is seen by the equally annoying eczemas and psoriatic lesions not being accompanied by these sad thoughts. The syphilitic lesion being directly before their eyes reminds them continually of the presence of the disease.

The Obstinate Late Lesions of the Mucous Membranes of the Mouth, and Their Treatment with Salvarsan. The mucous patches that occur in early constitutional syphilis usually disappear promptly under either mercury or salvarsan, but recur under either treatment. The aptitude of recurrence seems to be about the same in both, and therefore their presence does not furnish any special indication for giving salvarsan. In the enthusiasm accompanying the introduction of salvarsan it was asserted that it would heal up these mucous patches promptly and definitely, and that as these patches are known to be most virulent, and are the means of spreading the disease by kissing and otherwise, and are especially involved in the infections of the innocent, salvarsan should be administered in every case of early constitutional syphilis for the definite purpose, if for nothing else, of stopping this means of infection. As these mucous patches recur after a dose of salvarsan as readily as after a course of mercury this reason for giving the new drug does not exist. Gummata of the mouth and tongue are as easily controlled and cured by the old drugs as by the new remedy, and furnish in the majority of cases no special indication for administering salvarsan.

There, however, is a disease called recurrent herpes of the mouth and tongue, that Fournier says, in ninety-six per cent of cases, is due to syphilis.[4] There is no way by the local symptoms alone of distinguishing absolutely between herpes that is due to syphilis and that that is due to some other cause. Neither the luetic nor the non-luetic lesions are infective. Years ago I saw with Dr. J. D. Arnold one of these cases, where one of the lesions ulcerated into the corium of the mucous membrane of the cheek, thereby indicating that this particular lesion was more than a herpes. Not long since a man who had been infected with syphilis three years previously, consulted me on account of a particularly persistent, distressing, recurrent herpes of the mouth, especially of the tongue. Mercury would clear up the eruption temporarily. On stopping the mercury, however, the herpes would shortly recur. Being sure that the attacks were of gastric origin I strongly advised appropriate diet and medication, and explained the amelioration obtained by mercurial treatment as being due to the beneficial action of the mercury on the digestive organs. The patient's condition, however, steadily grew worse, and as from the pain he was reduced to meager fluid diet, he was consequently rapidly losing flesh. I finally felt impelled to give salvarsan. The herpes cleared up remarkably quickly, and the recurrences since have been slight and painless, and resemble ordinary "canker sores." A Wassermann test taken five months after the administration of salvarsan was still faintly positive.

These cases are very rare, and they sometimes

clear up, as did the one above mentioned as being seen with Dr. J. D. Arnold, under the vigorous inunction of mercury combined with an internal treatment with iodid of potash. Sometimes such a treatment secures, as in the other case, only temporary benefit. The disease is peculiarly distressing as the raw surfaces make eating very painful, and the annoyance is present day and night with every movement of the mouth or tongue.

There is another late lesion of syphilis of the tongue that is difficult to manage with the old methods of treatment, but clears up under salvarsan. It is a low grade irritable inflammation of the side of the tongue. Far back opposite the molars the surface rises up into obtuse lumps like papules separated by cracks. This lumpy formation is not papular at all in the sense of being local syphilitic deposits, but is the result of the accentuation of the anatomy of this part of the tongue. This syphilide clears up readily under salvarsan. There is still another late syphilide located on the inner surface of the lower lip that is refractory to treatment by the old methods, and which should be readily manageable under salvarsan. It consists of plateau-like elevations having a number of minute gray depressions on their flat surfaces. They look like condylomata, but are flatter, and more permanent. The best local treatment is cauterization with acid nitrate of mercury. I have never had the opportunity of treating them with salvarsan, but I should think the new remedy would be admirably suited for them.

It may be added that this paper deals only with the treatment of the lesions mentioned in its title, and that the question of the cure of syphilis in a general sense is not here considered.

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SALVARSAN IN SYPHILITIC DISEASE OF THE NERVOUS SYSTEM.*

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In this paper we wish to report our experience in treating 28 cases of syphilis of the nervous system by salvarsan. The majority of these cases were followed in the Division of Medicine of Leland Stanford Jr. Univ. No other anti-syphilitic treatment was given as a rule after salvarsan. Before entering upon a description of these cases we wish to make mention of a few important articles which have appeared upon this subject.

Marinesco [1] of Budapest was one of the first to publish the results of his experiences. In his series of tabetics he found that salvarsan had a beneficial effect in cases where mercury had no effect, and also found that it acted more quickly than mercury.

In the Fifth Annual Meeting of the German Neurological Society in Frankfort [2] in October of last year, salvarsan was discussed by the leading neurologists in Germany. Oppenheim had 65 cases of tabes and general paresis to report. His results appeared to be so unsatisfactory that he considers the use of salvarsan to be contraindicated after a positive diagnosis has been made in these diseases. Nonne was more conservative but thought that expectations had not been fulfilled in the treatment of parasyphilitic diseases by salvarsan. In the same meeting Finger still maintained that the neuro-recidives following the administration of the drug were evidence of acute arsenical poisoning and stated that these nervous relapses occur in psoriasis, lichen ruber and lupus treated by salvarsan.

In an article [3] in the Muenchner Medizinische Wochenschrift in November last Ehrlich states that he believes the drug to be no more dangerous than chloroform; that the neuro-recidives are no more frequent now than they were formerly with mercury, and that the cases of thrombosis reported may have been due to the use of a too alkaline solution. He makes a point of advising the use of freshly made distilled water in preparing the solution and thinks by this precaution that the reactions often observed may be avoided. He quotes Gennerich in stating that in late and tertiary cases patients may be kept symptom-free by the combined use of salvarsan and calomel injections. He advises against the use of salvarsan in advanced disease of the cardio-vascular system and of the nervous system.

In this country salvarsan was discussed in a joint meeting of the New York, Boston and Philadelphia neurological societies [4] on Nov. 4, 1911. Weissmann reported 50 cases of nervous disease treated. He reported benefit in paresis, tabes and in cerebro-spinal syphilis. Watermann had 25 cases of tabes to report and noticed improvement in ataxia, in bladder symptoms and in relief from pain. Sachs reported 51 cases and believed that the drug could favorably influence the symptoms in tabes and paresis but had no curative effect.

A question of prime importance in considering this remedy is whether its administration may be followed by serious results. Gaucher [5] in Paris reports 7 cases of death following the administration of salvarsan and believes the drug to have a toxic action. In Germany, Martius [6] reviews 18 cases of death in which salvarsan could only be called in question as a causative factor in 7 cases. Almvist,[7] Fisher,[8] Kannengieser,[9] Hoffmann[10] and Vecki [11] have published instructive cases with autopsy findings. Westfall [12] of Bonn reports a case of death in tabes. A frequent condition found at autopsy in these cases is encephalitis hemorrhagica and parenchymatous degeneration of the internal organs. Sicard and Lhermitte [13] believe that the drug has a selective toxic action on the eighth pair of cranial nerves. Dosseker [14] in Switzerland reports 13 cases of neurorecidive and concludes that their frequent occurrence since the use

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

of salvarsan can only be explained on the basis that the drug plays a part in their production. Lacapére [15] has seen optic atrophy come to a standstill after salvarsan. McClennahan [16] reports a case of optic atrophy in which blindness followed an injection.

In our cases the drug was administered by the intravenous method and only freshly prepared distilled water was used in preparing the solution. In a number of the cases repeated injections were given. At first it was our custom to give larger doses than we give at present, and this may account for the large number of reactions that we have observed. Our percentage of reactions was 52. In 10 per cent. the reaction may be classed as severe, with rise in temperature, increased frequency of the pulse and respiration, headache, vomiting and occasional chill. We have not observed any lasting ill effects from the drug. The Wassermann reaction was held of great value in determining the syphilitic nature of the affection in question: in three cases, however, we administered salvarsan in the presence of a negative Wassermann reaction, and in one case (No. 5) with decided benefit. In six cases there was a positive Wassermann reaction in the spinal fluid when it was negative in the blood. This was found to be the case in four cases of tabes (Nos. 10, 13, 17, 19). In five cases the Wassermann reaction was changed from positive to negative, one of these cases being a case of tabes (No. 6). In two cases not included in our list we held that the administration of salvarsan was contra-indicated. One was a case of tabes with an aortic valvular lesion, the other was a case of general paresis with a marked arterio-sclerosis.

Ten cases of tabes were given salvarsan and we believe improvement has followed in seven cases. In these cases relief from pain was a frequent result, although it was not lasting after a single injection. In one case (No. 20) severe shooting pains disappeared for a period of four months after one injection, and in this case also bladder symptoms were relieved. In two cases we noticed an alteration in the state of the reflexes (Nos. 6, 10). In two cases there was no benefit (Nos. 13, 19). A case markedly improved was one (No. 10) of marked ataxia and muscular weakness. A case which presented gastric crises as the prominent symptom, was improved. A case with a negative Wassermann reaction in the blood and spinal fluid showed a positive reaction in the blood 10 days after the injection ("provokotorische reaktion" of Ehrlich).

We group 12 of our cases under the heading of cerebrospinal syphilis. A case (No. 5) in which the chief complaint was intense headache had freedom from pain for a period of three months and gained five pounds after one injection. The headaches have returned. Three cases (Nos. 8, 9, 15) of hemiplegia complained of headache as a principal symptom. In two of these cases the headaches were somewhat relieved. One of these cases had epileptiform attacks which were not perceptibly influenced. A case of spastic paraplegia of Erb seemed to improve in that the spasticity was not so great. One case in this classification received three injections of salvarsan (No. 14), but was not strikingly benefited. One case (No. 16) appeared to lose ground after the injection.

There were two cases of neurasthenia (Nos. 4, 12) with a positive Wassermann reaction. The first case was in a woman. As a result of the injection she was freed from most of her symptoms and gained over eight pounds. One case of syphilitic polyneuritis (No. 1) and one of facial neuralgia (No. 3) were practically cured. A case of neurorecidive received three injections of salvarsan after his vision began to fail and we believe that salvarsan checked the progress of the optic neuritis where mercury apparently had no effect whatsoever (No. 11). A case of diabetes insipidus (No. 28) with a history of infection and a positive Wassermann reaction was relieved of headaches and eye symptoms and the daily amount of urine voided dropped from 16 to 10½ litres.

There were no cases of general paresis treated.

CONCLUSIONS.

We believe to have in salvarsan a valuable remedy in syphilitic disease of the nervous system.

No serious results have followed its administration in our cases.

The relief obtained from one intravenous injection appears to be temporary in the majority of cases.

On account of the frequency of the reactions it is advisable to give small doses—not over 0.3 gms. in the female and not over 0.4 gms. in the male.

Case 1.—Syphilitic polyneuritis. L. C., age 35, Chinaman, laundryman by occupation. Denied having had an initial lesion. Entered clinic complaining of pain and weakness in arms and legs. Examination showed steppage gait, drop wrist and weakness of the extensor muscles of the arms and legs. Partial reaction of degeneration was found in these muscles. Ptosis of right eyelid. Achilles tendon, patellar tendon and radial reflexes abolished. Diminution of the sensibility to pain and to touch in the extremities more marked in the distal portion. Superficial glandular enlargement. Heart dullness normal, no murmur. No edema. Oct 14, 1911, Wassermann reaction xxx. Oct. 17, salvarsan 0.6 gm. intravenously followed by a slight rise in temperature to 99.8° Fahrenheit. Following salvarsan potassium iodide was given. From the time of the injection patient began to improve for a period of one month and then improvement seemed to cease. Nov. 23, Wassermann reaction xxx. Nov. 28, salvarsan 0.6 gm. intravenously, followed by Fowler's solution of arsenic. Patient improved after this second dose very rapidly. Jan 12, Wassermann reaction ———. Patient had left the hospital in the meanwhile and towards the end of January returned to work. We believe this case to have been one of syphilitic polyneuritis. The case will be published elsewhere in detail.

Case 2.—Meniere's Disease. Syphilis. C. G., age 33, millworker. Came to the clinic complaining of whistling noises in left ear of deafness and of vertigo. Denied having had syphilis. Nov. 24, 1911, Wassermann reaction xxx. Weber lateralized to left, Rinne positive. Schwabach normal. Nov. 25, 1911, salvarsan intravenously. No

reaction. Salvarsan followed by potassium iodide and mercury. Dec. 22, 1911, no improvement.

Case 3.—Facial neuralgia. Syphilis. P. A., age 54, by occupation a cook. Complained of severe facial neuralgia involving the ophthalmic and superior maxillary divisions of the 5th nerve on the left side, and also complained of pain in the region innervated by the occipital nerve on the same side. The trouble had existed for two months. Gave a history of chancre 14 or 15 years previously and treated 7 or 8 months with mercury. Nov. 24, 1911, Wassermann reaction xxx. Nov. 25, salvarsan 0.6 gm. intravenously. Prior to this injection patient had been given various remedies for the relief of his pain which was very severe. The day following the injection the pain was less severe and became less so from day to day. All other medication was discontinued. On Dec. 14, 1911, as patient still had some pain, another dose of salvarsan was given intravenously—0.6 gm. After this injection there was a slight reaction, vomiting, chilly sensations and a temperature of 99.3° Fahrenheit. Dec. 26, 1911, patient continued to improve and on this date was dismissed from the hospital. He was seen once since leaving the hospital and stated that there had been no recurrence.

Case 4.—Syphilis. Neurasthenia. B. H., age 43, housewife. Came to the clinic with the complaint of headache, weakness and stomach trouble. Denied leutic infection. Examination showed a mitral regurgitation well compensated, otherwise examination negative. Nov. 23, 1911, Wassermann reaction xxx. Nov. 25, salvarsan 0.6 gm. intravenously. Complained of slight headache and nausea on afternoon of the same day as the injection. Temperature 99° Fahrenheit. Dec. 1, reports no improvement in condition. Wt. 102½ lbs. Dec. 28, Wassermann reaction ———. Feb. 23, 1912, headaches have disappeared, but patient still complains of weakness. Mar. 20th, weight 110 lbs., a gain of 8¼ lbs. since the injection. Still complains of weakness, but other complaints have been much benefited.

Case 5.—Syphilis. Cephalgia. T. C., age 35, housewife. No history of lues. Complained of severe basal headaches, of vertigo and of general weakness. Examination of patient negative. Patient had received a course of 45 inunctions of mercury prior to which treatment the reaction of Wassermann was positive. In December, 1911, the Wassermann reaction was negative. Dec. 8, lumbar puncture performed. An analysis of the spinal fluid showed no departure from the normal. Patient at this stage complained of great suffering. On Dec. 9, salvarsan 0.3 gm. was given intravenously. There was a severe reaction following consisting of a chill, nausea and vomiting and a temperature of 100° Fahrenheit. The temperature receded the following day but the nausea and vomiting persisted for two days afterwards. On Jan. 5, 1912, reported a steady improvement in the last two weeks. Weight 103½ lbs. Jan. 24, no more headaches. Feb. 23, no more headaches, weight 108 lbs., a gain of 5 lbs. since Jan. 5. On March 29, Wassermann reaction was negative, but the headaches had returned although not severe.

Case 6.—Tabes. Gastric crises. G. G. L., age 41, plasterer by occupation. Denied having had a chancre. Complained of severe attacks of gastric pain with persistent vomiting. These attacks had been present for 2½ years, and three months before coming to the clinic an exploratory laparotomy was performed. Examination: Argyll-Robertson pupils. Patellar tendon reflexes present. The right achilles tendon reflex present, left absent. Heteronymous diplopia. Hypersensitiveness to cold over thighs and trunk. Oct. 20, 1911, Wassermann reaction in the blood xxx; in the spinal fluid xxx. A cell count in the spinal fluid showed 20 white cells in 1 cmm. Oct. 21, salvarsan 0.6 gm., no reaction. Nov. 1, area of hypersensitiveness to cold diminished, left achilles tendon reflex present. Dec. 14, Wassermann reaction in the blood ———. Feb. 1, gastric crises still persisting but patient thinks that they are not so severe as formerly. Status: Pupils show no change. The left achilles tendon reflex is again absent. This fact was noted on a subsequent examination of the patient in the kneeling position. Babinski's reflex hammer was used. Both patellar tendon and the right achilles tendon reflexes present. A second injection of salvarsan was given—0.6 gm. intravenously as before, but with this injection there was a decided reaction: a pulse of 132, nausea and vomiting and a temperature of 99° Fahrenheit. On April 2, gastric attacks were not so frequent or so severe as formerly, and both patellar and achilles tendon reflexes were found to be present. Wassermann reaction ———.

Case 7.—Tabes. Gastric crises. F. F., Japanese, age 28. Entered the clinical ward of Lane Hospital on Jan. 3, 1912, suffering from severe attacks of gastric pain with nausea and vomiting. Gave a history of chancre 4 years previously. Was treated with inunctions of mercury at this time. Jan. 5, Wassermann reaction (blood) xxx; in spinal fluid xxx. An examination showed a greatly emaciated man with an ataxic gait. The patellar and achilles tendon reflexes were absent. Pupils irregular in contour and reacted sluggishly to light. Jan. 8, salvarsan 0.6 gm. intravenously. Following the injection there was a pulse of 122, but at the same time the patient felt better than he had felt before the injection. Jan. 11, no longer any pain, patient can retain nourishment. States that he feels better and he also looks better. Jan. 24, note in history, "Left hospital much improved." Patient subsequently left for Japan and was lost track of.

Case 8.—Syphilis. Hemiplegia. M. Y., age 24, clerk by occupation. Came to the clinic complaining of paralyzed left side, also of frequent headaches and epileptiform attacks. Denied having had lues, but it was afterwards learned that he had a course of mercurial treatment before coming to the clinic. Dec. 28, 1911, Wassermann reaction in the blood ———. Jan. 5, 1912, Wassermann reaction in the spinal fluid xxx. Jan. 12, salvarsan 0.6 gm. intravenously. Following injection there was headache, nausea and vomiting, but no rise in temperature. Feb. 7, reported one epileptiform attack since the injection, but thought that headaches had not been so severe.

Case 9.—Syphilis. Hemiplegia. Mrs. H., aged 43, housewife. No history of syphilitic infection. Came to the clinic complaining of paralyzed right side, of headaches and of pain and soreness in shoulders and neck. Had not had any anti-syphilitic treatment. Hemiplegia resulted from a stroke four years previously, and at this time patient lost the power of speech for a period of five months. June, 1910, an epileptiform attack. Since this attack has been troubled with headaches and pain above mentioned and with progressive difficulty in walking. An examination presented the signs of an ordinary cerebral hemiplegia. There were no pupillary abnormalities and the fundi were normal. The eye movements were normal and there was no nystagmus. No signs of arterio-sclerosis. Jan. 12, 1912, Wassermann reaction (blood) ———. Spinal fluid: Wassermann ———. Nonne reaction positive, 17 white cells to the cmm. of fluid. Feb. 27, salvarsan 0.4 gm. intravenously, no reaction. Mar. 4, pain not so severe but walk had not improved. Apr. 15, word received from patient, who had since removed to Arizona, that there had been much improvement of late, but no details were given.

Case 10.—Tabes. G. D., age 50, laborer by oc-

cupation. Came to the clinic complaining of difficulty in walking and of progressive weakness. Denies syphilis. Trouble came on gradually two years ago. Was given mercury and potassium iodide by mouth. Examination: Great ataxia and a marked Romberg. Patellar and achilles tendon reflexes absent. Pupils slightly irregular in contour but are equal in size and react promptly to light. Muscular force appears diminished, but there is no muscular atrophy. No gross disturbance of the sensibility. Dec. 14, Wassermann reaction xxx in spinal fluid. Previous to this, the Wassermann reaction was twice negative in the blood—Sept. 19 and Sept. 28, 1911. On Jan. 12, 1912, Wassermann reaction in blood ———. An analysis of the spinal fluid showed no cellular increase and no increase in albumen. Jan. 12, 1912, salvarsan 0.6 gm. intravenously. Temperature following of 99.6° Fahrenheit and slight headache. Feb. 1, patient said that he felt stronger and could walk better. Apr. 3, patient returned to the clinic and reported marked improvement; could walk decidedly better and had gained 5 lbs. An examination showed a return of the patellar tendon reflexes, while the achilles tendon reflexes were absent.

Case 11.—Syphilis. Optic neuro-recidive. B. P., age 24, fruit packer. Oct. 12, 1911, chancre—a virulent infection. Two days later an injection of salvarsan 0.6 gm. Chancre reacted promptly. Five weeks after the injection the vision began to fail. Nov. 30, salvarsan 0.3 gm. Vision in the left eye improved steadily after this injection, which was followed by mercury and potassium iodide. Dec. 20, patient reported at the eye clinic. Report stated that eyes showed great swelling of discs, much exudate and hemorrhage. Dec. 18, Wassermann in blood ———. Jan. 6, 1912, severe iritis. Jan. 7, spinal fluid drawn. Analysis showed no increase in albumen or in cellular elements and the pressure was 130 mm. of fluid in the horizontal position; but the reaction of Wassermann was xxx. Jan. 9, status: No light perception in right eye; left eye hand movements only. Salvarsan 0.6 gm. intravenously, followed by a severe reaction consisting of a chill, headache and a temperature of 101° F. Jan. 11, still no light perception in right eye, but in left eye could count fingers at 12 feet. Jan. 24, blind in right eye, vision in left eye 20/100. At this time complained of pain over body generally. Jan. 25, salvarsan 0.6 gm., no reaction following. On Jan. 30, when last seen, the vision in the left eye had not changed.

Case 12.—Syphilis. Neurasthenia. W. B., age 48, cigarmaker by occupation. Chancre 25 years ago not followed by secondaries. Complained of nervousness, of sleeplessness, of twitching of muscles and of inability to concentrate his mind on his work. An examination showed an irregularity of contour of the right pupil and Abadie's symptom, otherwise there was nothing of importance brought out by the examination. Jan. 31, 1912, Wassermann reaction (blood) xxx. Feb. 20, salvarsan 0.6 gm. intravenously, no reaction. Mar. 20, patient states that his condition has improved somewhat.

Case 13.—Tabes. J. B., age 47, laborer. Came to the clinic complaining of wasting of his muscles, of shooting pains, of failing vision and of inability to empty his rectum. Chancre (?) 14 years ago, no treatment following. His present trouble dated back five years. Since the onset has taken mercury and potassium iodide, but patient stated that he believed that these drugs aggravated rather than improved his condition. The examination showed external strabismus in both eyes and sign of Argyll-Robertson. Atrophy of muscles about the left shoulder. Left tendo achilles reflex absent. Vision diminished in both eyes and fundi pale. Feb. 18, 1912, Wassermann reaction in the blood x———; in the spinal fluid xxx. An analysis of the spinal fluid showed a positive Noguchi test and 100 white cells in the cmm. A broad band of hyperesthesia to thermic stimuli and to pain was found about the trunk and extending down the thigh on the left side. Feb. 19, salvarsan 0.6 gm. intravenously, followed by a reaction consisting of headache and vomiting on the day of the injection and a temperature of 100° Fahrenheit on the day following. Mar. 27, patient reports no benefit following the treatment. An examination showed no change in the objective symptoms after the injection.

Case 14.—Cerebro-spinal syphilis. J. F. S., age 49, a hoisting engineer. Gave a history of "chancres" 10 years ago not followed by an eruption. Was treated for a period of one year following. Examination in the clinic revealed the presence of a general glandular enlargement, pupillary inequality, arterio-sclerosis and a positive Romberg. Both the patellar and achilles tendon reflexes present. Complained of headaches, of dizziness and of parasthesias in hands. Apr. 18, 1911, Wassermann reaction xxx. Apr. 28, salvarsan intravenously, followed by potassium iodide. May 9, improvement, if any, slight. June 17, Wassermann reaction xx—. June 20, salvarsan followed by potassium iodide. July 22, Wassermann reaction xx—. Given mercurial inunctions. Aug. 19, improvement; Sept. 9, Wassermann xx—. Sept. 13, salvarsan. Sept. 20, no change in condition and advised to continue rubbings. Nov. 13, Wassermann x———. Dec. 11, feels better, headaches have stopped but still feels dizzy.

Case 15.—Syphilis. Hemiplegia. C. P., age 40. History of a chancre four years previously, followed by secondaries. Treated for three years afterwards almost continuously. Hemiplegia (left) had existed for 1½ years. Principal complaint was of frontal and occipital headaches. Jan. 26, 1912, Wassermann xxx. Report from eye clinic: "Temporal side of discs pale. Vision normal." Jan. 30, salvarsan 0.6 gm. intravenously. A slight reaction followed, consisting of vomiting and a temperature of 99.2° Fahrenheit. On Feb. 6, patient was discharged from the hospital, no improvement.

Case 16.—Syphilis. Cephalgia. N. O., age 47, native of Sweden. Entered the clinic on Jan. 8, 1912, complaining of headaches, of pain in the lower part of the spine and in the extremities, and of dizziness. Denies having contracted syphilis. Examination showed a general glandular enlargement. The pupils were equal in size and reacted well to light. The reflexes showed no departure from the normal. There was no involvement of the cranial nerves, no paresis and no disturbance of the sensibility. Jan. 12, Wassermann (blood) xxx. Jan. 17, salvarsan 0.6 gm., no reaction following. Jan. 26, reported at the clinic feeling weak, tired and dizzy. Given mercury and potassium iodide. Feb. 7, had lost 16¾ lbs. in weight in three weeks. Given Fe. Mar. 16, patient left for the country. Word received from him some time later gives the information that he had improved some but that the glands had not decreased in size. One of the glands was excised for examination and showed a chronic lymphadenitis.

Case 17.—Tabes. P. F., age 59, barber by occupation. Chancre 17 years ago. Inunctions for one month following. Present trouble dates back seven years. Received practically no antisyphilitic treatment since the onset of present trouble. Complained of difficulty in walking and of shooting pains in legs. Examination showed a moderate locomotor ataxia, knee jerks absent, Romberg present and Argyll-Robertson pupils. There was marked disturbance of the sensibility. Wassermann reaction (blood) x———; in spinal fluid xx—. Spinal fluid showed the Nonne reaction positive and a cell count of 22 white cells to the cmm. Mar. 8, 1912, salvarsan 0.6 gm. intravenously. Some headache followed the injection, but there was no reaction, properly speaking. Mar. 16, shoot-

the pains which were severe before the injection have decreased since the injection. Apr. 2, pains have returned, although they are not so severe as formerly. Patient does not notice any marked improvement in his condition.

Case 18.—Syphilis. Radiculitis (lumbar roots). L. C., age 25, laborer. Denies syphilitic infection. Complained of severe backache of two years' standing, and an examination revealed a very rigid lumbar spine. Nov. 23, 1911, Wassermann reaction ++++. Dec. 3, salvarsan 0.6 gm. intravenously, no reaction. For several days following patient had less pain, but pain soon returned. Jan. 3, Wassermann reaction ++++. Jan. 24, patient reported no improvement.

Case 19.—Tabes, forme fruste. Female, age 45, housewife. Infection 16 years previously. Was thoroughly treated with mercury at this time. Now complains of headache, of attacks of severe gastric pain and of pain generally over body. Examination revealed inequality of pupils, presence of Abadie's symptom, hypoesthesia to tactile stimulus about the left nipple and hyperesthesia to cold about the trunk. The hearing was diminished. There was no Romberg and no ataxia. Jan. 11, 1912, Wassermann in blood negative; in spinal fluid positive. An analysis of the spinal fluid showed 250 white cells to the cmm. Nonne and Noguchi tests positive. Jan. 20, salvarsan 0.4 gm. intravenously, no reaction. Feb. 7, no change in patient's condition. Intramuscular injections of calomel commenced. Mar. 25, patient decidedly improved.

Case 20.—Tabes. M. D., age 45, laborer. Chancre 17 years ago which was treated four or five months. Complained of great difficulty in walking, of shooting pains and of difficulty in holding his urine. Onset of present trouble about 2½ years ago. In July, 1911, entered the City and County Hospital, previous to which time he had very little treatment. At this time the reaction of Wassermann was positive. Examination revealed a great ataxia and a marked Romberg. The knee jerks were almost abolished. The pupils reacted to light. Disturbance of the sensibility was present. The patient was given salvarsan intravenously in Oct., 1911. Soon after the administration of the remedy the shooting pains left him and remained absent for a period of four months. The patient volunteered the information that his bladder symptoms had improved markedly, and on the return of shooting pains of a mild type requested that he be given another injection.

Case 21.—Syphilis. Exophthalmic goitre. Mrs. P., housewife, native of Russia, age 27 years. Came to the clinic complaining of neuralgia in the lower branch of fifth nerve and of headaches. History of chancre followed by secondaries four years previously for which she treated one month. Two years later an eruption believed to be syphilitic was treated for one month. Examination showed a decided enlargement of the thyroid gland, moderate exophthalmos, slight tremor in the right upper extremity and inequality of the palpebral fissures of the two sides. Feb. 24, 1911, Wassermann (blood) xxx. Mar. 11, salvarsan 0.6 gm. followed by a reaction which commenced on the same day as the injection and which persisted on the following day. The temperature rose to 100.8° Fahrenheit, the pulse was 98, and the respiration 56. There was vomiting. On the second day the pulse rose to 104 while the temperature and the respiration dropped, the latter being 24. Mar. 14, patient left the hospital feeling rather weak.

Case 22.—Tabes. P. C., age 50, longshoreman. Complained of difficulty in walking and of severe shooting pains. In 1903 had a "blister" on the penis followed by a skin eruption which was not treated. The trouble in walking and pains in legs came on about two years later. Examination showed: Romberg, marked ataxia and absence of the tendinous reflexes in the lower extremities. Charcot joint, right knee. Argyll-Robertson pupils. Trouble in urination—slight incontinence and difficulty in starting flow. No optic atrophy. As to previous treatment of this condition he gave a history of being in the City and County Hospital in 1905. Mar. 16, salvarsan 0.45 gm. intravenously, which was followed by a severe reaction—vomiting, dizziness, a temperature for two days following, the highest temperature noted being 99.8° Fahrenheit. Mar. 21, has had shooting pains twice in legs since injection, but they were not severe. States that he can feel with his toes better because he "can count his toes in his shoes." Mar. 26, shooting pains have returned. Apr. 2, pains every night as formerly but not so severe.

Case 23.—Spastic paraplegia of Erb. D., age 43, painter by occupation. Gives a history of a chancre in 1891 for which he treated 1½ years following with mercury. His complaint on entering the clinic was of great stiffness of his legs and great difficulty in walking. The trouble had existed since 1905 and had become progressively worse. Examination showed patient to have a very marked spastic paraplegia with exaggeration of the tendinous reflexes of the lower extremity and both plantar reflexes in extension. There was no disturbance of the sensibility either subjective or objective. Report from the eye clinic: "Discs pale but probably normal." Involvement of both vestibular and cochlear branches of eighth nerve both sides. The spinal fluid was drawn and an analysis showed it to be normal. The Wassermann reaction was made in the following dilutions of the spinal fluid: 0.1 ++++; 0.5 xxx; 1.0 xxx. Mar. 16, salvarsan 0.45 gm. intravenously, no reaction. Mar. 25, patient says that he can walk decidedly better and says that his eyesight has improved.

Case 24.—Tabes. J. M. M., age 50, a carpenter by occupation. Chancre (?) when 19 years of age for which he received no treatment. Complained of inability to walk, of shooting pains and of incontinence of urine. Trouble had existed seven years. Examination showed a great ataxia, Argyll-Robertson pupils and absence of the tendinous reflexes in the lower extremities. Great disturbance of the sensibility, including the deep sensibility. Perforating ulcer right foot. Patient had received very little treatment since the onset of his trouble. Mar. 21, Wassermann reaction in the blood xxx; in the spinal fluid xxx. An analysis of the spinal fluid showed an increase of albumen and 277 white cells in the cmm. In the stained specimen only lymphocytes and plasma cells were seen. Mar. 23, salvarsan 0.4 gm. intravenously, no reaction. Apr. 5, patient states that he has no pain and there is an improvement in his power to control his flow of urine. An examination shows no change of the objective symptoms present before the injection. Apr. 11, patient states that there is a marked improvement in his bladder condition.

Case 25.—Tabes. M. M., age 48, sailor. Chancre (?) eight years ago not followed by secondaries, for which he treated for a period of three months. Complained of unsteadiness on his legs, of numbness of legs and of difficulty in controlling the flow of urine especially at night. Present trouble dates back five years; since two years had been energetically treated by mercurial rubbings, under which he benefited greatly. Examination shows a marked Romberg, absence of the tendinous reflexes in the lower extremities and diminished sensibility to pain in the legs. The reaction of Wassermann was found negative both in the blood and in the spinal fluid. Analysis of the spinal fluid showed a positive Nonne reaction and a cell count of seven white cells to the cmm. Mar. 26, 1912, salvarsan 0.6 gm. intravenously. In the afternoon of the same day slight nausea and a temperature of 99.2° Fahrenheit. Apr. 6, Wasermann reaction in the blood positive—provokotorische reaktion of Ehrlich.

Case 26.—Syphilis. Cephalgia. Mrs. K., age 48, housewife. Gives a history of what might have been a syphilitic infection 25 years ago: vaginal discharge followed by pains in shins and sore throat. Has had sores on body from time to time up to the present. One year ago was in Lane Hospital and was treated for chronic syphilitic cerebro-spinal meningitis. Was given 30 injections of mer-cac-o-dal followed by potassium iodide and was much benefited. Now complains of headache, chilly feelings and nervousness. Examination showed an unsteady gait, pupillary inequality and irregularity, diminished hearing; otherwise negative. Mar. 29, 1912, Wassermann reaction in the blood xxx; in the spinal fluid ———. An analysis of the spinal fluid showed a normal albumen content and no increase in cellular elements. Mar. 30, salvarsan 0.3 gm. intravenously. With the exception of a temperature of 99.6° Fahrenheit, had no reaction. Apr. 12, patient thinks she is not so nervous since the injection.

Case 27.—Syphilis. Cephalgia. Mrs. S., age 31, housewife. No history of syphilitic infection. Complained of headaches, of attacks of dizziness, of loss of hair and of weakness. A thorough examination failed to reveal any evidence of organic disease. Oct. 20, 1911, Wassermann in blood xxx. Treated by mercurial inunctions. Nov. 9, Wassermann reaction ———, some improvement, and in the meanwhile was given potassium iodide. Jan. 19, 1912, Wassermann reaction ———, improvement continued. Feb. 24, Wassermann xxx, mercurial inunctions resumed. Mar. 22, Wassermann reaction xxx. Advised to enter the hospital for an injection of salvarsan, the symptoms still persisting. Apr. 2, Wassermann reaction in the spinal fluid ———. An analysis of the spinal fluid showed no increase in albumen or in cellular elements. Apr. 2, salvarsan 0.3 gm. intravenously. A temperature of 99.4° Fahrenheit followed and patient complained of great pain in arm injected but there was no headache or nausea. Apr. 10, patient reported at the clinic complaining of headache. There was a temperature of 99.8° Fahrenheit and a pulse of 114.

Case 28.—Syphilis. Diabetes insipidus. A. T., age 37, fireman. History of a chancre 13 years ago for which he was treated for a period of six months following. He entered the clinic complaining of excessive thirst, of excessive urination, of headaches and of occasional diplopia. Present trouble had existed for six years previously, during which time he had been treated energetically with mercury with little if any benefit. At the time of visiting the clinic he was passing 16 quarts of urine a day. Jan. 5, 1912, Wassermann reaction in the blood xxx. Jan. 15, salvarsan 0.6 gm. followed by a reaction consisting of a chill, headache and a temperature of 100.5° Fahrenheit. Jan. 18, passing less urine. Feb. 12, passing as much urine as formerly—33 pints in the last 24 hours; but has gained 9 lbs. in weight and is not troubled with headaches or eye trouble. Feb. 16, salvarsan 0.6 gm., no reaction following. There was no change in the amount of urine excreted following this injection and patient received mercurial inunction for one week. Mar. 11, Wassermann reaction xxx. Mar. 14, salvarsan 0.4 gm. intravenously, followed by nausea and vomiting, slight chill but no rise in temperature. Apr. 1, patient states that he now passes on an average of 10½ quarts of urine a day, a quantity considerably less than that which he voided before the course of treatment was commenced. He thinks he has improved decidedly after the first and third injections.

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A PRELIMINARY REPORT ON TWENTY-THREE CHILDREN TREATED WITH SALVARSAN.*

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The treatment of the cases dealt with in this paper extended over a period of only nine months, the majority having been treated within the past six months; thus only a preliminary report can be made. It is my intention at a future meeting, or in a later paper, to publish further observations on these cases.

All of these children are clinic cases, patients at the children's clinic of the Medical Department of Stanford University. In age, they vary from 14 days to 16 years, and present a varied clinical picture.

The method of dealing with these cases was as follows: On admission to the clinic, a careful family history was taken first to ascertain if there had been early or late congenital symptoms. A thorough physical examination was made, with laboratory examinations of the blood, including a Wassermann test; the urine, and in some cases, the stools were examined. After this routine, the patients were admitted to Lane Hospital, where injections were made, usually in the morning, and unless a reaction occurred, the children were taken home by their parents on the same afternoon. It was intended then to have a Wassermann test done once each month, on every case, and to have reinjections made, the number and dosage of which might be controlled by the serum reports, and the effect of the drug on the original symptoms. It was impossible to carry out this scheme in every case because in a large clinic the dread of hospital treatment, blood taking, as well as the expense keeps many parents from bringing the children regularly. However, in nearly half the cases two injections were given, and from one to four Wassermann tests made in all the cases after the first injection.

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

The ages of the children were as follows:

4 between 13 and 16 years.
10 between 6 and 13 years.
5 between 1 and 6 years.
3 infants { 3 months. / 20 days. / 14 days.
1 luetic suckling treated through its mother.

I would like to discuss each case by itself, but because of the number of cases and lack of time, the finer details will be left out and the cases divided into groups.

Before taking up the cases, a discussion of the method of injection, the quantity and dosage of the drug, and its after effects might be of interest. After a light breakfast, both arms were scrubbed and a sterile bandage applied. The solution was made up with sterile distilled hot water; no normal saline was used. It was filtered into a single, graduated, 300 c. c. container, connected by a long tube to the needle. All the injections were intravenous, and with five exceptions, where the veins had to be cut down upon were percutanious. In all the cases, with the exception of the 3 infants, 150 c. c. of solution was used, and either 4/10 or 3/10 gms. of salvarsan given. After the injections the children were kept in bed, and in the afternoon after a specimen of urine had been taken, they were sent home. Only five out of the 23 cases developed unpleasant after effects; these developments were limited to nausea, vomiting, and in some of the cases, a rise in temperature to 100°, which lasted from 6 to 12 hours. Three of these patients were put under an anesthetic during injection, and I ascribe most of the after symptoms to this cause. Routine examinations after each injection showed that the urine did not vary from the normal.

In order to simplify matters, I have divided the cases as follows:

12 cases exhibiting interstitial keratitis.
2 cases exhibiting bone lesions.
3 cases exhibiting { 1st. atrophic rhinitis. / 2nd. arthritis. / 3rd. backward growth, Hutchinson's teeth, and positive Wassermann reaction.
1 case exhibiting acquired secondary symptoms.
1 case exhibiting encephalitis and interstitial keratitis.
1 case exhibiting chorea.
2 infants exhibiting early congenital symptoms.
1 leutic suckling treated through its mother.

The cases of interstitial keratitis, 12 in number, were sent from the eye clinic. A careful history and physical examination was made to ascertain, if possible, how many showed early and how many late luetic symptoms. It was found that out of 12 cases, five gave a specific family history; of these, two fathers and two mothers gave a positive Wassermann. In only two instances did we get any evidence of early signs, and this was delayed walking, which is not necessarily characteristic. Of the late symptoms, seven had Hutchinson's teeth; one Moon's molars; two, ozena; eight, general lymphatic enlargement,—but this happens in nearly all poorly nourished children and is not necessarily an evidence of syphilis; one child had an encephalitis. None gave any evidence of impaired hearing.

Coming now to the present eye infection, we find that in this group, five were what I call chronic cases,—that is, extended over a period of four or five years, or as far back as the parent can remember, with numerous recurrences; seven were acute, from a month to a year in duration with a few recurrences. Every case presented a double keratitis during the time of observation, and with the exception of two cases, so far as we could find out, none had undergone previous specific treatment.

Because it is difficult to make a positive diagnosis of specific keratitis, it was decided to use salvarsan in all cases of keratitis that came to the clinic. However, before this was done, the Wassermann test was done by Dr. Oliver and of the twelve cases, seven showed a triple x reaction and five were negative. This brings up an interesting point as to whether a negative Wassermann should contraindicate the giving of the drug, for in two of the negative cases, a positive reaction resulted with the blood taken a few weeks after the first injection of salvarsan, and in a third case reported as triple x before injection, blood taken three days after injection showed a much more marked reaction.

As to the results of the serum reaction: the five cases which before treatment gave a negative Wassermann, all except one remained negative from 3 to 7 months after injection. One case, injected three months ago, and again a month ago, gave a negative result after the first injection, but three weeks after the second injection, the reaction became positive. This case is interesting in regard to the improvement in the child's eye condition, which I will discuss later. Of these five negative cases, all were of long standing, and had repeated recurrences, and with the exception of one case, showed no improvement in the eye symptoms. The parents stated, however, that their general condition seemed better, and this no doubt is due to the tonic effect of the drug, which is undoubted. The fifth case was the child whose serum reaction became positive after the second injection. Two months ago he was sent from the eye clinic with a double keratitis of the chronic type, films over both pupils, marked injection of the vessels, he could see a hand a foot away but could not count fingers. Wassermann negative. This child was three years of age. He was injected with .4 gms. of salvarsan and at the end of a month, his sight was somewhat improved and another .4 gms. was given. Two weeks after the second injection, the Wassermann became positive, and when I saw him three weeks afterwards, the injection of the vessels had disappeared, the right eye had entirely cleared up, with a small film to the right of the left pupil remaining. The boy is now going to kindergarten, with sight almost normal, with a negative Wassermann taken a week ago.

The seven cases exhibiting triple x Wassermann showed better results. The first boy, age 6 years, had a double keratitis, could only see large objects a foot away; he was treated with mercury for one month with no improvement. He was given .3 gms. of salvarsan nine months ago. Three days after injection, a Wassermann was taken which Dr. Oliver said was very much more marked than the first. The eyes cleared up considerably and a month later, a second injection was given. A month later the film was entirely gone from both eyes, the pupils were clear, and Wassermann taken at the fifth and sixth months after the first injection were negative. The second case, boy, age 12 years; double infection with a marked injection of vessels, film covering both pupils, with such a pronounced photophobia that he could only tell night from day. This case was shown before the Cooper Science Club before his first injection. Eight months ago he was given .4 gms. of salvarsan; two weeks later he could count fingers a foot away, and six weeks after injection he came back to the clinic with his photophobia gone, a slight film over the left pupil, and the right eye clear. His Wassermann, taken at the fifth and seventh months, was negative, and now his sight is normal and he attends school regularly.

We believe that these two cases represent cures, in that their eye symptoms have cleared, and both have at the present time negative serum reactions.

The third, fourth and fifth cases of this positive group have all been injected within the past three months; one of them has had a second injection. The fifth patient was injected three months ago, he improved slowly, and was injected again a month ago; since the second injection the improvement has been more marked, and at the present time he has a negative Wassermann. The former two cases have been injected lately, second injections have not been given as yet. Reports from the eye clinic show, however, an improvement already.

In this group, two cases with positive serum reaction show no improvement, both are of the chronic type, the infection has lasted over a period of years with many relapses. One boy, age 6 years, whose condition included encephalitis, has had two injections during the past eight months, the Wassermann is still positive, and he has shown no improvement in eye or brain symptoms. The other case, a boy, age 14 years, with marked keratitis, was injected twice during the past three months. The second month he had a double x Wassermann, and at the third (taken a week ago) the reaction was negative. Nevertheless, up to the present time, there has been no improvement in his eyes.

In the next series of eleven cases, all were congenital except one. Four showed a positive family history, and with the exception of the three infants, there were few signs of early or late syphilis, only one of these cases presenting Hutchinson's teeth.

The two cases with bone lesions are extremely interesting. The first case was a boy, age 13 years, who came into the clinic with a spindle-like swelling of the great toe. He complained of pain on walking, and examination showed a crepitation of the metatarsal-phalangeal joint. Wassermann negative, and a diagnosis of probable sarcoma made. X-ray showed a thickening of the soft tissues and a marked periostitis of the bones. He was treated for two months with mercurial injections, during which time the swelling of the soft parts diminished, but pain and the same degree of periostitis, as shown by a second X-ray, persisted. Believing that the condition was at a standstill, it was decided to try salvarsan, and nine months ago, .3 gms. were given, bringing out a positive Wassermann two weeks later. Two months after the first injection, a second injection of .4 gms. of salvarsan was given. X-rays taken two and four months after the injections show a marked decrease in the periostitis, and for the past six months the boy has been at school and has entered into the sports of the other children. His Wassermann became negative the second month and has remained so. The second case was that of an infant, age 20 days, father specific, weight of child, 4 pounds 8 ounces. Entered hospital in a moribund condition, and had an abscess in the right buccal region discharging through a sinus extending to the symphysis of the lower jaw. A probe revealed an osteo-myelitis of the bone in this region. For a month different foods were given to the child with a gain of only a few ounces, and the abscess still discharging.. At this time a Wassermann was made and was positive. On account of so slight a gain, and a plus Wassermann, 1/30 gms. of salvarsan (10 c. c. of solution) was injected into a vein in the right bicubital fossa. The needle was easily injected through the skin into the vein, the child suckling on its bottle during the operation. Four days after injection, the sinus entirely cleared up, the child gained over a pound in three weeks, and in the next four months doubled its original weight. A month after the injection, the Wassermann was negative and remained so. Six months later the child was boarded out, brought back to the hospital shortly afterwards, dying with a double lobar pneumonia. The only evidence of lues found at autopsy was a very slight specific osteochondritis. This case was reported before the Cooper Science Club last October.

The next three cases are what might be called border-line cases, and were injected more for the tonic effect of the drug than because of any pronounced symptoms. One case had a positive Wassermann, the other two, negative, and all three had either a specific family history, or some characteristic symptom. One case presented a chronic atrophic rhinitis, which did not yield to the ordinary treatment of several months; the second case presented an arthritis with a typical saddle nose and general glandular enlargement; the third, backward growth, Hutchinson's teeth, and a positive Wassermann. These cases were injected during the past three months. The positive case became negative at the second month. The case with atrophic rhinitis has improved, but it is too early to note any marked improvement as to the general health.

It seems to be the consensus of opinion that the

initial and early secondary stage of lues yields best to salvarsan, and this is true in the only acquired case in this series.

The patient was a child of nine years, father specific, and both mother and child in the early secondary stage. The latter had mucous patches on the tonsils, uvula and pharynx, and a rash covering the entire body. She had had no previous treatment. At this time, seven months ago, she was given .3 gms. of salvarsan, the symptoms cleared up quickly, and she has had no return since. The first month she had still a triple x Wassermann, second month, double x, and we thought she was probably going on to a negative reaction which we might possibly call a cure. At the sixth month, however, her blood was taken and showed a marked triple x reaction, and she complained of headache. A second injection, composed of .2 gms., was then given. No further blood test has since been made, but no doubt we will soon be rewarded with a negative result, and no further symptoms.

There has been much discussion of late in regard to the effect of salvarsan on chorea, and we were fortunate about six weeks ago in getting a boy in Lane Hospital from the clinic with this condition. This child is six years of age, and had a similar attack two years ago. His blood showed a triple x Wassermann with the interesting fact that the mother and four children at the same time showed a negative reaction.

The child showed the classical symptoms of a marked chorea, exaggerated reflexes, choreic movements of the arms and legs, and inability to carry his food to his mouth without spilling it. He was put to bed and given salicylates for a week with little effect; then .3 gms. of salvarsan was given, which dose was repeated two weeks later. After the first injection the improvement was certainly more rapid than the usual case, for at the time of the second injection he could write his name, hold out his hand without a tremor, and handle his food well. A boy with a similar condition, Wassermann negative, was injected at the same time, but was taken home by the mother a day afterwards, and the case was lost track of.

The encephalitis case was the worst infected one in the series. He was a boy of 5 years, coming into the clinic with a double keratitis of the chronic recurrent type, mucous patches, perforated palate and as many as twenty fits during the day. He showed Hutchinson's teeth and a positive family history, a positive Wassermann, and a marked degree of anemia. He was treated for two months with deep injections of bichloride of mercury, the mucous patches cleared up, but his cerebral and eye condition remained about the same. Four months ago he received .4 gms. of salvarsan with no after effects, and the same dose was repeated a month later. His encephalitis possibly is somewhat improved, but the keratitis remains about the same, with the Wassermann still positive.

It is with satisfaction that I am able to make such a good report on the three infants injected, one case age 14 days, already discussed with the osteomyelitis, and two others, one 20 days and the other 5 months of age. The baby 20 days of age weighed six pounds, had a specific rash, fissured anus, snuffles, and was losing in weight. No previous treatment, and a positive Wassermann on admission. Because the veins were invisible, the child was given an anesthetic, a vein in the arm cut down on, and 1/30 gms. of salvarsan injected, dissolved in 10 c. c. of solution. The rash cleared up in three days, the fissures soon after, and three and a half months later the child had gained over four and one-half pounds. The first month after the injection, the serum report was triple x (?), and the third month, a week ago, there was a negative Wassermann. The child at the present time looks fat and healthy.

The third infant, age 5 months, was admitted with a specific rash, snuffles, and no gain in weight for a month. This child was fed in the ward for three weeks, its weight was stationary, and although the Wassermann was negative, it was decided to give salvarsan. In this case, a 10 c. c. Luer syringe was used, and 2/10 gms. of the drug in 30 c. c. of solution was injected into one of the head veins without an anesthetic. The snuffles and rash cleared up in a few days and the child began to gain immediately. She is now under the care of the Associated Charities, and without change in the method of feeding, she shows a steady weekly gain. None of these infants showed any after effects.

The last, and one of the most interesting cases, got away from us before we could make any observations of value. This was the case of a specific mother with a luetic infant eight weeks old. Two weeks after the child was born, the mother broke out with mucous patches in her mouth and a secondary rash. Six weeks later she came to the clinic with the infant, who was covered with a typical luetic rash all over the body. The mother's Wassermann was positive, both from her blood and breast milk. She was injected with 6/10 gms. of salvarsan, and during the next twelve hours was nauseated and had a temperature of 100°. During this time, however, she nursed the child at three hour intervals. Two days later she brought the child back again, and although she had been nursing the child, the infant's rash was much more marked, snuffles were added to its symptoms. This no doubt was a Herxheimer reaction which Ehrlich describes as occurring in some of his cases.

CONCLUSIONS.

(1). The intravenous route is the ideal method of injection.

(2). Children may be given fairly large doses of salvarsan with no ill effects.

(3). High dilutions and slow injections are less likely to give unpleasant after effects.

(4). More than one injection must be given, and the injections must be controlled by the serum reports.

(5). Chronic cases of interstitial keratitis, per-

sisting through a period of years with many relapses, yield less readily to the drug than the more acute cases.

(6). Keratitis yields more quickly to salvarsan than to mercurial treatment, and whether relapses occur or not, can not be determined at this writing.

(7). Salvarsan is not contraindicated in infants under three months of age, and gives marked results, both as a curative and tonic in early congenital syphilis.

(8). An original negative Wassermann in hereditary, as well as in acquired syphilis, may become positive after an injection of salvarsan; therefore, with a positive family history and specific symptoms, a negative serum report does not contraindicate the giving of the drug.

Discussion.

Dr. Louis Gross, San Francisco: I feel that as we all have to pass through infancy, so have we to pass through the infancy of salvarsan. I may be a little radical in my ideas, but I have had fairly good results—I will not say fairly good, but exeeptionally good results. One gentleman said here that it has not stood the test of time. We will all grant that, but when you take a drug like salvarsan which has been used in individuals who have had mercury, and the mercury has not controlled the symptoms after four years, and you then use the salvarsan and there are no symptoms and few recurrences, you are pretty certain of the drug; this particular patient had had four negative Wassermanns. One of the speakers claims it does not penetrate the deeper tissues. Let me recite the case of a patient of mine, a medical man, who had a xxx positive Wassermann and Noguchi before treatment. After his first salvarsan, Noguchi and Wassermann was x (nearly positive); after his second injection, Noguchi xxx, Wassermann xx; after his third, negative. Undoubtedly if the salvarsan had not penetrated the deeper tissues it certainly acted as a magnet and drew the treponema into the circulation. Regarding sterilized water (which I have always used freshly prepared), which some authorities claim prevents vomiting, is absolutely wrong, for in some cases there is considerable vomiting and in others none at all, some after the first and sometimes none after the following injections. As far as the bad effects—out of 200 injections I had had only two cases of by-effects. I think it is a question of proportion of the injection as well as the technic. One doctor from Los Angeles recited a case where the nurse had to stir the solution in order to prevent it from precipitating. No wonder we have had bad effects because the technic and preparation of fluid had not been sufficiently studied. As far as para-syphilis is concerned I have had very little experience. One case was that of an optic lesion that became well. Whatever I have said is from my experience in a series of 200 injections in 80 to 90 cases. I have been radical and have used as many as seven injections in the one individual. Why not? If they claim one injection gives you the results of six months of mercury, why should you not use a larger number of injections of salvarsan if it is practically harmless? I am radical because I have had results and I shall continue to be so because I have seen no ill-effects. In all of my cases no mercury has been used and until I find that it does not do its work I will say salvarsan in all cases.

Dr. Granville MacGowan, Los Angeles: The finding of the spirochetae pallidum is only valuable in a small percentage of cases of initial lesion, where the clinical appearance of the sore is such as to confuse an experienced person, and the social conditions surrounding the patient are such as to render the speedy disappearance of the sore, of great moment.

The typical chancre with its classical signs, as Dr. Cushing has said, should be taken at its face value. While I do not intend to belittle laboratory work, it takes considerable technical skill to express the serum containing these organisms and to prepare the slides, and it presupposes the possession of an expensive apparatus and the ability to interpret the picture obtained correctly. This is not possessed by many people. The vast majority of luetic cases have to be diagnosed and treated by the physician who cannot stain for spirochetae. It is the same with the Wassermann test; very few physicians are possessed of the plant and experience required to carry it out with intelligence, and the greater number of these are faulty in the interpretation of their findings. I know of no test into which the individual equation of the searcher enters so much, and while I regard it as a useful adjunct in the diagnosis of syphilis, particularly in late affections of the nerves, bones, and arterial and visceral lesions, I certainly cannot place positive reliance upon a test that is so uncertain that I could get a positive xxx answer from an experienced examiner, and within a week obtain a negative answer, without any treatment being instituted, or as I have done, received a negative, x positive and xxx positive from three different examiners within a few days of each other, without treatment, and the patient being unmistakably syphilitic all of the time. It is also not safe to conclude that an individual has syphilis because of a positive Wassermann. I have noticed a tendency among purely laboratory men to believe their findings are infallible, and many of them are at times a bit arrogant if the value of their deductions is doubted. My advice to you is not to lean upon them or give them implicit confidence.

Speaking to the young men, do not let yourselves fancy that you can get along without the painstaking methods of diagnosis founded upon careful clinical observation, which we older men had to go through. If your eye and your finger and the deductions of reasoning from what they teach you, are at variance with the Wassermann test, pay no attention to the latter. Its greatest value is in the control of treatment. It has always been a matter of great moment as to when to cease giving mercurials to a syphilitic, when the point is reached when he ceases to be a menace to the stranger, to his offspring, and to the man he has a chance to be in his later years. Heretofore we have had no guide, rules have been arbitrary and "so much mercury and iodide of kalium in such and such a time" and a cure results, has been the dogma. But we all know when we make these statements that their truth is only relative and convincing, chiefly, because of the presumptive authority to make them. Only a very small percentage of luetics take prolonged treatment. It is expensive and irksome, and heretofore when all external symptoms have disappeared, we had nothing to convince them that they should go on for an indefinite time with the treatment, for we have never been able to tell them how we knew when it should cease. With the Wassermann test, or one of its modifications, negative, not once, for it is frequently negative in the presence of active syphilis, but continuously negative for a year, I should regard the cure as attained.

Dr. H. R. Oliver, San Francisco: Doctor Brem emphasized the facts as they should be regarded, as to the reagents. This cannot be too greatly emphasized. We find that the general practitioner considers making the Wassermann reaction simply a mechanical reagent from different laboratories if you find that it is very difficult to get perfect antigens and perfect amboceptors. The

guinea pig serum itself sometimes varies. One has to use extreme care in this very delicate procedure. The combinations must be exact to bring about the complete reaction and unless one has the materials perfectly standardized the results are bound to be erroneous. In regard to the negative reactions as in cases stated by Doctor Cheney where there is a marked syphilis and where no marked reaction persists, it is considered that there is a paralysis of the formation of the antibodies in the blood, consequently the Wassermann reaction is not present then and it is only after patients are given salvarsan and 10 to 12 days have elapsed that it becomes positive due probably to the toxins of the dead spirochete giving rise to antibodies. If a patient has been treated with mercury his blood becomes negative due to the influence of mercury upon the antibody formation. If mercury is stopped he becomes positive again. If you take a patient who has become negative to mercury and is not cured and give him salvarsan in 10 or 12 days he becomes positive again. Doctor Cheney spoke about not having cases of the vascular system which showed positive reaction. I have seen in the last three years about 10 cases of aneurysm of the aorta in which not one failed to give a positive reaction. The abortive treatment of syphilis—of these I have seen a number of cases and have treated 7 or 8 cases of primary syphilis in which the Wassermann had not occurred in the blood but the spirochete had been shown in the initial lesion by the dark field condenser. In these cases not one has had symptoms recur. Some of them 12 months have elapsed since the injection of salvarsan. The Wassermann reaction never became positive again.

Dr. W. J. G. Dawson, Eldridge: I simply wish to state that I had the Wassermann tests begun on the children in the Sonoma State Home on July 7, 1911, and up to and including April 15, 1912, 813 tests have been made. Tests have not yet been made on children under 8 years of age, consequently we are unable to give the percentage of positive results to be included in 1000 cases because in hereditary syphilis, as you know, age is a predominating factor. The administration of salvarsan was begun Dec. 3, 1911. Dr. Grace Linforth, who is doing this work and is also assisting in the Letterman General Hospital at the Presidio where a large number of cases are under treatment and are being constantly controlled, states that from their experience there, results cannot properly be specified from the laboratory point of view for at least two years and probably longer. From my own clinical observation I must admit that we have found as yet, no marked change in the mental condition, nor do we expect any until these cases have received two or more treatments, according to the findings by the Wassermann reaction. Now what are we driving at in these examinations? It is well known that two things are supposed to cause imbecility more than anything else—they are heredity and alcohol. Syphilis has been regarded as a small factor in the etiology of feeble-mindedness. It is very hard to get any history of syphilis when we send out blanks to be filled in by the relatives. There are two institutions for the feeble-minded in the east doing this research work now. We are supposed to carry on this work for the West and report to the American Association for the Study of the Feeble Minded which meets at Vineland, N. J., next June. In this connection I wish to say that the profession as a rule knows very little about the feeble-minded. There is no place where research workers could find a better field than among the feeble-minded. I wish that the medical profession not only understood this but would endeavor first to find the causes of feeble-mindedness and then to use their influence to prevent this condition.

Dr. L. Schmitt, San Francisco: I agree with Dr. Brem that it is absolutely necessary to properly standardize all the reagents used for the Wassermann reaction. At the University of California Hospital the complement as well as the other reagents are titrated each time. As to Dr. Newmark's cases I was concerned with them in so far as I did some of the serological work. The clinical evidence of syphilis was so strong in the patient with the brain tumor that I was asked to see her at night in order that there be no delay in starting the administration if necessary and after a few injections a marked improvement was noted. Concerning the second patient—the one with the spinal tumor, my results were obtained after operation and were all negative. As to Dr. Roth's contention that reinfections reported might be later stages of syphilis, it is easy to find treponema pallida in the primary lesions and difficult in later manifestations. In the majority of cases of reinfection reported treponemata were abundant in the first and second infections. As in typhoid a reinfection denotes an absolute cure of the first attack. As to the remarks of Dr. Gross about a triple plus reaction meaning a driving out of treponemata from the deeper tissues it is only necessary to state that the reaction measures the defensive antibodies and only remotely indicates the number of treponemata present.

Dr. Langley Porter, San Francisco: With regard to Dr. Yerington's paper I am sorry he had not more time because I feel in the proper application of the remedy in inherited syphilis during infancy, we have the solution at the same time. There are a few points to which I want to call your attention. When Dr. Yerington first undertook this work I was skeptical as to the outcome, but after seeing his results and watching the children improve and seeing the number who after treatment manifested negative Wassermanns, I realized the importance of it. I think the difference between Dr. Yerington and most men in the European clinics lies in the fact that in nearly all the European clinics until recently, the intramuscular injection was used and in nearly all cases in the buttock I cannot think of any place in a little baby worse than that—in nearly all cases the children die of sepsis and constantly the reports speak of abscesses, etc. Another reason why intravenous injection should be preferred was recently shown by examination of the urine, and that is that after four hours arsenic begins to be eliminated in the urine. While with intramuscular there is a very slow beginning of elimination and not complete after three months. Another point that came up in the work was the tonic effect of which he has already spoken to you. Having seen some cases of negative Wassermann in which the complement fixation reaction became positive after an injection, and no bad results were obtained, we began to conclude that we might inject wasting children—the invariable result was a gain in weight, although there was no history of syphilis. We believe the tonic effect is due to the effect of the arsenic on the bone marrow and stimulation to the blood. Another point to be taken into consideration is the fact that very few of the older children had developed early signs—there was no history to be obtained and so we thought it very important that all cases of wasting children, especially the children who cry a great deal at night, who probably have pain, should be tested by the complement fixation reaction, and when other means failed, we advised giving salvarsan. Another point I would like to mention comes to me to-day because of the fact that an infant was admitted to the wards a few days ago—a wasting, crying infant. There was nothing to suggest syphilis. Dr. Oliver reported on the complement fixation, which was positive. The father denies syphilis, but he says that he had gonorrhea which lasted over three or four years, and it seems to me that a chancre in the urethra would be a very difficult thing to diagnose and easily overlooked.

Dr. D. W. Montgomery, San Francisco: Dr. Cheney's case with the negative Wassermann was most interesting. I suppose it was malignant syphilis with marked lesions of the throat and skin. They are sometimes deceptive because of giving a negative Wassermann. The skin lesions, however, are usually so characteristic as to permit of a positive diagnosis. Dr. Vecki's paper was most entertaining and instructive. It had the true flavor of the clinic. There was no necessity for apologizing for the fewness of the number of cases. They were well and objectively reported. Dr. Porter's observations in regard to infantile and hereditary syphilis were instructive. It was in a conversation with Prof. Lesser that I first learned the value of salvarsan in these cases. He showed me his statistics with, I think 40 per cent. of deaths previous to the introduction of salvarsan and no deaths since its introduction.

Dr. H. C. McClenahan, San Francisco: I desire to make a few remarks especially directed to the neurological side of this question and particularly concerning tabes and optic nerve atrophies, and, like Dr. MacGowan, I have made notes in order to be sure of just how much to say and how much not to say. In addition to the case mentioned by Dr. Schaller there are three other cases that I have had under close observation for over a year that deserve brief mention. I entirely corroborate what Dr. Schaller has said about the apparent improvement and especially the return of the knee jerks in his case. In looking over the notes of this case I find under date Sept. 10, 1910, in my handwriting—K. J. and A. J. very weak, and under date of March 19, 1911—K. J. and A. J. not obtainable Romberg present. On April 15, 1912, I examined the knee jerks at the request of Dr. Schaller and find that only a fairly normal K. J. present on both sides, but they are more marked by reinforcement. While the apparent improvement in this case is quite striking, yet I am constrained to believe that it means anything but a brief salvarsan respite so commonly observed in other cases. An interesting feature of this case is that both blood and spinal fluid were reported negative at the first test and before any anti-syphilitic treatment was instituted; both blood and spinal fluid becoming positive after treatment was given. Case 1—a 29-year-old machinist with history of infection twelve years before, referred from the eye clinic on March 15, 1911, with following note: "Vision failing for past two months—diagnosis atrophy of optic nerves." This patient stated that he had received an intramuscular injection two weeks prior to this date and that he could read and do his work up to date of treatment. His blood Wassermann was negative, his spinal fluid positive, and his vision practically gone. Apr. 3, 1911, he was blind and has remained so. The discs are quite typical of the large white primary atrophic kind. Case 2—a marine fireman, 49, seen first March 3, 1911. No history of infection, but his hair "fell out" ten years ago and "came back" seven years ago. He had diplopia relieved by operation, four years ago lightning pains, two years ago paresthesia and numbness in lower limbs; this improved by Hg injections and inunctions. He was treated in the ear clinic one year ago for "buzzing" in ears. Eye clinic reports "slight pallor of right disc as if caused by some former papillitis." He had a Romberg; absent knee jerks and ataxia of upper limbs. This patient has had during the past year five intravenous injections of salvarsan. His blood has remained constantly negative and his spinal fluid has remained as constantly positive. He showed improvement after each treatment, but his condition to-day is objectively unchanged except that he has lost very considerably in body weight. Case 3—age 53, sailor, was referred from the eye clinic on Feb. 27th, 1911, with note, "Argyll-Robertson pupil partial 3rd nerve palsy." He complained of vertigo, seeing double and failing vision, and gave history of infection 28 years previous. Blood Wassermann positive. After first salvarsan injection blood remained negative and his spinal fluid positive, and he has had during the year four intravenous injections. These two cases are reported because they represent the only ones we have been able to follow for over a year, when the laboratory work was done on both blood and spinal fluid; and each had four or more injections. In both cases the spinal fluid has remained positive and the blood negative; no change in the vision; the subjective symptoms have been temporarily improved, and the objective symptoms have remained unchanged. Case 1 occurred so early in our experience with salvarsan in optic nerve atrophy and was so deplorable in result that it exercised a most restraining influence upon us in subsequent advice in such cases—in fact we have not consented to its use only in those cases where vision was practically lost, and in three such cases the result was the inevitable total blindness. These experiences in view of Oppenheim and Nonne's advice and Fuch's position in optic nerve atrophy, taken in connection with the fact that total blindness may be deferred to five, ten or even twenty years in such cases, certainly justifies extreme caution in advocating the use of salvarsan in optic nerve atrophy. Before concluding I would like to call attention to one observation made in practically every case when salvarsan has been given in neurological work—that is, the universal improvement in the subjective symptoms. All cases will say they are much better for the first few weeks succeeding the treatment, while in very few, if any, cases has the improvement been lasting or proportionately observed in the objective symptoms. Whether this is to be attributed to the stimulating effect of the drug or to the mental phenomena, I am not certain but am inclined to the view that the latter deserves consideration in the explanation. A summary of our experience since the institution of the salvarsan treatment to the present time at the neurological clinic of Cooper College seems to justify the following: First, salvarsan undoubtedly exercises a most beneficial influence on the subjective symptoms in syphilis of the nervous system; second, that this benefit is rarely lasting and is never proportionately observed in the objective symptoms; third, that little or no difference in permanent results has been observed over the older lines of treatment; fourth, that its use in optic nerve atrophy is doubtful and possibly dangerous; fifth, that our experience so far does not justify promising any permanent objective improvement in degenerative diseases of the central nervous system.

Dr. Vecki, closing: I only want to say one thing and that is that I take exception to the one assertion of Dr. Gross. He claimed that he prefers salvarsan because one injection will do what six months of mercurial treatment will not do—I am sure six months of mercury under all circumstances will do more than any salvarsan will do.

Dr. Yerington, closing: I want to emphasize the great importance of repeated injections in these infantile cases. In my opinion a Wassermann should be done every month following the first injection and future injections and dosages controlled by the serum results. In several of my cases the Wassermann remained negative for one or two months, then became positive, showing the importance of repeated blood examinations.

EARLY DIAGNOSIS OF EPIDEMIC POLIOMYELITIS.*

By RAY LYMAN WILBUR, M. D., San Francisco.

Our steadily increasing knowledge of poliomyelitis or epidemic acute meningoencephalopoliomyelitis (Heine-Medinsche Krankheit) brings out more clearly than ever the necessity for early recognition of the disease if it is to be combated successfully either in the individual or in the community. If a curative serum is discovered or some chemical substance found that will destroy the virus within the body it must be administered promptly before the damage to the nervous system has become irreparable; and if quarantine is to be an effective agent for common protection it must begin with the onset of the disease. It is unfortunate that our knowledge of this scourge has been so confused by the paramount importance given to its striking complication, the paralysis. The very term "infantile paralysis" is a misnomer and must be dropped from our list of names, for the disease is far from being one confined to infants and it is more than likely that paralyses including even those that are transient, occur in but a moderate percentage of those who are suffering from it. Physicians must learn to consider the paralyses only as corroborative evidence of poliomyelitis. Much as a paralysis of the palate may point to the diphtheritic organ of a preceding tonsillitis or an orchitis may permit the diagnosis of mumps to be made where the parotid glands are but little involved; so the presence of an acute limb or other paralysis can verify the presence of poliomyelitis, but it should not be necessary in order to originally make such a diagnosis. It will require a readjustment of the whole point of view for physicians to seek thoroughly in young febrile patients for hyperesthesias and muscular spasms and increased reflexes as they do for "Koplik spots" or "strawberry tongues."

Knowledge of the disease has come to the physician wrong end foremost and to get the idea of paralysis out of mind and substitute therefor the picture of an acute infectious disease with general involvement of much of the body and particularly of the nervous system is required before early diagnosis and successful treatment of poliomyelitis will be possible. In other words, the usual and ofttimes unconscious conception of the disease interferes with its prompt recognition. How few physicians consider poliomyelitis as a possibility in acute abdominal pain; and yet a study of it shows how commonly such pains occur in its course together with various intestinal, gastric and peritoneal symptoms. Transient meningismus with intestinal disturbance; rheumatic pains after exposure; traumatisms with resultant pain, weakness and inability to use the limbs; headaches and neuralgic pains with later facial paralysis; urinary retention after a long cold ride; a rash over the chest and abdomen with obstinate constipation; lacurar tonsillitis with peripheral pains and weakness, are all common enough clinical pictures and yet all may be the early and perhaps the only evidence of a poliomyelitis. It is in this complexity of symptomatology and because of the abortive cases that the great difficulty of diagnosis lies, and it will continue to do so until some proper specific test is discovered. During epidemics diagnosis is much more apt to be made, but even then many patients will recover without the cause of their ailment being clearly made out. It is probable from the fleeting character of many cases, the temporary diarrheas of those members of afflicted families who escape, perhaps "poliomyelitis carriers," the separated foci of infection, the paralytic infections of animals noted along with most epidemics that many individuals have but slight susceptibility to the disease and that trauma, fatigue, general nervous susceptibility, indigestion and concomitant infections all play a part in furthering the invasion and development of the virus in the individual patient. A review of the hundreds of case histories that I have found in the literature from the epidemics in various countries shows the peculiarly noncommittal and misleading type of symptoms presented in the so-called abortive cases and in the early days of most of those frankly paralytic later, yet there are enough striking and fairly constant symptoms to permit of an early probable diagnosis where the condition is suspected, as it is apt to be, at the time when cases are occurring in rapid succession in any district.

The variability of poliomyelitis is one of its most puzzling and evident features. For instance in the ten acute cases observed by me in California during 1911 three only were of the typical spinal type with resultant limb paralysis; of the other seven, three would be classified as "abortive," having only transient inability to use certain muscles or aversion to their use because of pain, one died with acute ascending paralysis (Landry's), one had mild meningitic symptoms resembling the meningismus complex, one had polioencephalitis with resultant hemiplegia and later death, one had simultaneously spastic and flaccid paralysis of different parts of the body with bulbar symptoms. While in practically all of these cases the nervous system was the one primarily involved yet in them all enough other systems were disturbed to make the early diagnosis difficult. This is due to the generalized involvement of the body either directly by the presence of the virus or from toxins. The work of Flexner and others showing invasion, and perhaps elimination, of the virus by the tonsil and the intestinal tract, the pathological conditions found in the liver, the splenic enlargement, the cloudy swelling of the kidneys, the general swelling of the lymphoid tissues of the intestinal tract, all indicate that Wickman's description of the disease as a "disseminated myelitis the scattered character of which is particularly prominent in the brain" only partially covers the range of body involvement. While Medin's well-known classification, as added to by Wickman, into (1) the spinal, (2) ascending (Landry's paralysis), (3) bulbar, (4) encephalitic, (5) ataxic, (6) polyneuritic, (7) meningitic, (8) abortive types, covers the

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known clinical conditions better than any other and is superior to those of Zappert and Krause, yet for a study of the abortive cases and preparalytic stages it is better to think of the relation of the disease to three sets of symptoms which overlap more or less and often become completely overshadowed when effects upon the nervous system become paramount. These are:

1. The symptoms of a general infection with predominance of gastrointestinal disorders.

2. Symptoms referable largely to the localized or generalized involvement of the nervous system as part of an apparently general infection.

3. Respiratory and throat symptoms together with the evidences of more or less extensive infection.

A patient beginning in any one of these three ways may end up with a typical paralysis or recover so promptly that he is not suspected of even having had an "abortive attack." Since apparently all cases show besides the characteristic hyperemia of the brain membranes at least some pial inflammation (Dauber and later Wickman), a careful search for nervous symptoms becomes imperative to explain the general picture, which is that of an acute infection with sudden onset accompanied usually by general malaise, headache, unexplained spontaneous pains and hyperesthesias of various parts of the body, undue weakness, fever with profuse sweats, various gastrointestinal symptoms (vomiting, constipation, distension of the abdomen, etc.) and a fast weak pulse. The discovery of changed or absent reflexes, marked hyperesthesia, neck-rigidity, stiffness of back, projectile vomiting, unexplained restlessness, stupor, coma, urinary retention, slight incoordinations of muscular movements or muscular twitchings will often clear up the situation, but unless thought of and sought for they are easily overlooked.

It is probable that the brief duration of many of the nervous symptoms as well as the frequent rapidity of recovery, is due to the fact that they owe their origin to edema as well as hyperemia, for the grayish, slightly swollen appearance of the brain and cord with some flattening of the gyri and injection of the blood vessels, especially as noted upon the cut surface, is apparently characteristic.

For a more minute discussion of the initial prodromal and other symptoms it is best to take them up briefly in the order of their relative significance. It is well to remember that at times they are so slight that they may escape the notice of a superficial parent or attendant, but a careful history almost invariably shows that close observation would have disclosed some of the usual premonitory events. The disease may come on very gradually, perhaps best expressed as a "sneaking onset," or its usual sharp initial stage may come in two (Wickman) or even three distinct periods. (Case of Neurath.) In the New York epidemic the most frequently recurring initial symptoms were, in order: restlessness, headache, apathy, rigidity of neck, stupor, convulsions; while in one of the Massachusetts epidemics they were fever, pain, tenderness, vomiting, constipation, retraction of head, diarrhea, headache, nausea, delirium, anorexia, restlessness. These differences are indicative of the various pictures presented by poliomyelitis. The order given below represents the average importance from a diagnostic standpoint of the early symptoms as gathered from personal experience and the reports of many epidemics.

1. Hyperesthesia with Local or General Tenderness. That hyperesthesia is the most characteristic of the early signs of the poliomyelitis seems clear when numerous epidemics are compared (Wickman, Netter, Starr and Ed. Muller lay particular emphasis upon it), and it has been uniformly present in all of the early cases seen by the author of this paper. Many patients are so sensitive that crying of a low moaning sort follows the mere touching of the bedclothes or at the suggestion of combing the hair. In very young infants only acute articular rheumatism and scorbutus are apt to present the same degree of sensitiveness. Undoubtedly the urine is often retained or voided into the bed because the child fears to be touched. Standing brings on the pain and causes crying and in a suspected case pain will be elicited often by percussion along the spine. Passive movement of the limbs, especially if accompanied by pressure, usually increases the sensitiveness and is accompanied by pain. Pinching of the skin, pin-pricks, or pulling on a hair seem at times to cause agonizing pain, and there is often an increased sensitiveness to light and sounds, the teeth "feel on edge" and the patient may have the staring look full of fear and dread described as characteristic by some writers.

Over the abdomen the sudden release of the skin after pinching it up is accompanied by a marked distress. It is difficult to distinguish the pain that comes from a true hyperesthesia of the skin from the spontaneous pains in the muscles which are later affected. While the hyperesthesia may be due to a neuritis, Wickman and Menze think it comes from involvement of the pia. Undue irritability apparently due to indefinite pain or peripheral sensitiveness should invariably bring up the suggestion of a possible beginning poliomyelitis though unaccompanied by other symptoms.

2. Pain. The frequency of the occurrences of pain is indicated by the report of Dixon that it was noted in 564 out of 773 Pennsylvania cases. It may be of the meningeal type just noted as being present with hyperesthesia or it may be confined to muscles, or muscle groups, or along nerve trunks or in the chest or abdomen. This muscular pain is variously described as "aching," "cramp-like," "like the pain that follows walking too much," and it is frequently of a sharp, shooting character especially in the lower limbs. While usually spontaneous it is increased greatly by movement and pressure and it often radiates. In the lumbar region and across the shoulders it is at times severe enough to be agonizing. Very early it is apt to be occipital or cervical, but it is most characteristic when confined to the limbs where at times it seems to follow along the nerve trunks,

suggesting thereby a neuritic origin. It probably plays a large part in causing the unusual willingness shown at times by strong, healthy appearing children to remain practically motionless in bed when first affected by the disease. This unwillingness, not inability, to move is of much value in diagnosis in young children unable to report their sensations. In older individuals the pain is often noticeable in the abdomen, where its severity, associated with the usual gastrointestinal symptoms, tympany, etc., make the differential diagnosis from acute peritoneal lesions most difficult. Since the pains ordinarily disappear within a few days, a careful inquiry for evidences of previous pain must be made in all cases seen late. In this connection it is important to remember that tonsillitis may be the first indication of a poliomyelitis and that in differential diagnosis we must consder both acute rheumatism and the common peripheral and joint pains so often seen with or following the development of pus cocci in the throat. In poliomyelitis there is apt to be considerably more rigidity along the spinal column than in either of the above conditions. This sign is particularly valuable in those rare cases of poliomyelitis with swollen joints.

3. Fever. When sought for early enough, fever is probably invariably present. It may be inaugurated by a chill and be continuous or light remittent and last but a day or two, although it most often shows a rapid ascent to 102.5°-104° and persists for four days to a week. Zappert describes cases of two weeks duration and one finds in a number of case histories reference to a secondary rise after the first few days with sudden or increased paralyses. This often occurs where there is a history of severe exercise or fatigue following the early symptoms and where insufficient attention is paid to them. The fever may disappear by lysis or crisis and Müller and Meyer have called particular attention to an unusually labile rectal temperature often subnormal, found in poliomyelitis for some days after severe or even comparatively insignificant febrile states.

No relation has been shown to exist between the height of the fever and the amount of resulting paralysis—light onsets with low fever are as readily followed by paralyses as stormy ones. The more cases observed the more apparent becomes the fact that neglect, exercise and fatigue are more important than fever in relation to the paralyses, and I believe that many mild cases escape detection where children are kept quiet for a few days and that many others equally mild are made much worse by being urged or allowed to get out of bed.

4. Stiffness of the Neck and Back. All of the early cases seen by me have shown to a greater or less degree rigidity of the spinal column and stiffness of the neck. This can be elicited readily by raising the patient up to a sitting position by lifting on the back of the head. The whole spinal column is held rigid and bowed forward, producing a modified opisthotonus; and there is usually complaint of pain. In the meningitic type a high degree of neck rigidity often with retraction of the head is to be found, but even in the early days of severe cases or in abortive ones some stiffness is evident. Tension upon the head or the attempt to rise both cause pain and bring on a spasm of the neck muscles. If a child will voluntarily sit up in bed without use of the arms, caution must be used in making a diagnosis of poliomyelitis.

The wobbling of the head on the body upon movement is often characteristic of the paralytic stages of the disease, but even when it occurs pain may be present to about the same degree as in the spastic stage. It is remarkable to note that while neck paralyses occur in many cases, at least to such an extent that the head cannot be held up (39.8% in a New York epidemic), that residual neck palsies are not described in the literature.

5. Profound and Often Inexplicable General Body Weakness. This striking symptom comes early in most cases and it is usually commented upon by the parents or attendants of an afflicted child and spoken of voluntarily by older victims. The willingness to lie quietly in bed perhaps for several weeks is not uncommon even in unparalyzed cases. The disproportion between the evident general fatigue and the possible causes of it often attracts attention. It is most often noted in inability of the child to remain upon the vessel for any length of time or to sit up for meals. While ordinarily universal and often accompanied by abnormal mental states, it may be confined to individual muscle groups. When seen in children apparently but slightly ill, it has its greatest significance in diagnosis.

6. Headache. While usually headache is the first symptom, it is such a common complaint at the onset of illness that its diagnostic value is not great. The pain is of more moderate severity than that present in meningitis and there is early delirium with it. It may be frontal or diffuse, and, at times, especially when vomiting occurs, it is occipital. A general malaise is found with the pain in the head, but it is only when we have hyperesthesia of the body, neck rigidity and perhaps some apathy that it becomes definitely suggestive of a possible poliomyelitis.

7. Abnormal Mental States. Undue irritability, abnormal excitability, peevishness, and delirium may be early and prominent symptoms. Spieler has described a "Schlafsucht" lasting several days in some of the Austrian cases. While the entire sensorium is usually intact, the disturbances of consciousness at times are severe enough to cause a definite coma, the early occurrence of which does not have the grave prognostic import of its late appearance. In older children and adults the feeling of impending danger often gives a frightened expression to the face, hysterical laughing and crying may occur and a marked change in disposition is noted. The fear of death is not uncommon, perhaps due as much to the frequent dizziness and vertigo as to the general abnormal condition of the nervous system. The part that these mental states, especially vertigo, play in the accidents that often are noted in the early stages must be kept in mind.

8. Muscular Twitchings, Convulsions, Tremor. While encephalitic cases may have convulsions they are rare enough not to enter much into the diagnosis of poliomyelitis. Muscular twitching especially in the limbs is considered a common symptom by Zappert, and I have seen it in several cases and when present it is of much diagnostic importance. Tremor occurs but seldom, Wickman reporting but a single case among the many studied by him.

9. Sweating. Free perspiration or local sweating about the neck and head is so commonly reported (Starr, Krause, Ed. Müller) that it is undoubtedly a valuable symptom when acompanied by others more characteristic. At times its advent leads to a prompt relief of the pains previously the source of complaint, although in three-fourths of the cases Wickman states that it bears no relation to the fever, and is probably due to a lesion of the sweat centers or of nervous paths controlling the sweat glands.

10. Gastrointestinal Symptoms, Anorexia, Vomiting, Diarrhea, Constipation, Tympanites. As the recent work on its pathology would lead one to anticipate, poliomyelitis is almost uniformly attended by some marked interference with the normal digestive processes. Constipation has been present in most of the cases that have come under my observation, but diarrhea is the most evident symptom in some epidemics, and when it occurs the stools are reported as foul-smelling, thin and green colored. The possibility of this diarrhea, which is evidently due to the catarrhal changes in the mucous membrane and the involvement of the lymphatic system of the intestinal tract, being of an eliminatory character, has been suggested by careful observers. That the virus may be hurried out of the body in this way is perhaps worthy of note in the transient cases of acute diarrhea previously mentioned as occurring in the healthy members of families where one or two have typical poliomyelitis. Vomiting occurs early and it may be persistent and while less projectile than in meningitis, it often may occur with considerable force. Anorexia, foul breath (Lindner and Mally), coated or scarlet tongue, sordes and marked tympany as symptoms of a general paresis of the intestinal tract are commonly seen. Förster has described a toxic spasm of the abdominal muscles which adds greatly to the difficulty of diagnosis where appendicitis is suspected, and Müller emphasizes the hypotonicity of the abdominal wall with meteorism and an absence of the abdominal reflexes.

All things considered, the gastrointestinal symptoms are much more apt to lead to confusion in diagnosis than to aid, particularly since they all occur oftener in other conditions than in the one at present under discussion.

The slight enlargement of the spleen occasionally observed has to be kept in mind in this connection.

11. Vesical and Rectal Symptoms. The first clue to a proper diagnosis often comes from the unexpected failure of the patient to empty the bladder or to control the flow of urine. It is not a true paralysis of the sphincter, but is as a rule a retention, although in a few cases upon catheterization the bladder has been found empty, leading to the assumption that the anuria was due to the toxic effect of the virus upon the kidney. As Müller has stated, control may not be lost where bed-wetting occurs, but the little patient may seek to avoid the pain of being moved. Whenever the cord is markedly damaged, particularly in cases of the Landry's type, the loss of voluntary bladder and rectal control is one of the most striking occurrences just before or during the early paralytic stage. Its fleeting character is, according to L. R. Müller, due to transient and slight involvement of the sympathetic ganglia.

12. Circulatory Disturbances. A fast weak pulse (up to 140-150), often irregular and of low tension which is most marked just at the onset of the paralysis, is a very consistent symptom. Vasomotor phenomena are common, the skin is at times pale and cool, and in the Landry's type often markedly cyanotic. The hard edemas and other severe vasomotor lesions belong to the later periods of the disease. Epistaxis with or without flushing of the face and rapid pulse, while not characteristic, must be remembered as possibilities in order to avoid confusion with typhoid or other fevers.

13. Muscular Incoordination. Inability to stand or to walk, a sudden fall, or clumsiness with the hands, may be the first symptoms of poliomyelitis, and a certain amount of failure to perform complicated body movements is a fairly constant finding at some period of most cases. Previous to the paralysis the measured way in which simple movements are begun, the feeble and evidently fearful manner in which they are carried out, is of much value in diagnosis. Abortive cases are often readily recognized where with other symptoms there is a marked unwillingness to stand, especially striking where the child does not look sick.

14. Symptoms Referable to the Respiratory Tract. In some epidemics, such as the one in Hessen-Nassau described by Meyer, respiratory symptoms are the most evident early manifestations of the disease. A history of rapid respiration up to 40 or 60 without apparent cause occurs in many reports and may owe its origin to irritation of the phrenics. Marked changes in the respiration due to muscle paralyses do not occur in the preparalytic stage. Rhinitis, tonsillitis, and angina are confusing when they occur early, and with the commonly accompanying bronchitis may lead to mistaken diagnosis of influenza or even bronchopneumonia.

15. Skin Eruptions. Brown has described a skin eruption in six consecutive cases which was papulovesicular in character, superficial and of wide distribution. Petechial, macular, papular, and vesicular eruptions are fairly commonly mentioned as being present; scarlatinal blushes and even purpura are recorded in some histories. Lovett has met with poliomyelitis in association with the acute exanthemata. The rarity of the herpes labialis

mentioned by Ed. Müller is shown by the fact that among 61 cases of skin eruption in the New York epidemic only two had herpes, which is fortunately a common finding in meningitis.

16. Sensory Disturbances. Aside from the evident hyperesthesia, the older conception of the pathological changes being confined to anterior horn of the spinal cord, is shown to be incomplete by the various sensory disturbances noted in many cases. They may vary from anasthesia (Medin) to all forms of paresthesias.

17. Early Stage of Paralysis. The paralyses resulting from the effects of the poliomyelitis virus upon the central nervous system are, unless occurring in some unusual part of the body, so characteristic of the disease that when they appear diagnosis is as easy as it has been previously difficult. At present only the acute stage will be considered. At the end of the febrile period or comparatively soon thereafter, or even as the first evident primary symptom, a condition varying from reduced muscular tonus to complete flaccid paralysis with absent reflexes is discovered in some muscular group of the body, usually of the lower limbs (43% in Swedish epidemic of 1905). We know that all of the voluntary muscles of the body are liable to involvement and we may get paralysis of the outer eye muscles, disturbance of speech or swallowing, facial palsy, hemipalatal or hemidiaphragmatic paralysis as well as other forms of pure motor disturbance. Flabbiness of the muscles, reduced resistance to passive movements, pain on pressure or motion must be persistently sought for, as the paralyses are often most transient in character. The hypotonic state of the muscle is perhaps most characteristic with or without later electrical changes.

Most striking in the limbs is the frequent retention of the power to move the toes and feet, or fingers and wrists, when all control over the larger muscle groups is lost. The frequent prompt recoveries from the paralyses, seen especially in the trunk muscles, are apt to leave confusion as to diagnosis in their wake unless careful examinations are regularly made. Those cases in which slow recovery takes place or paralyses persist are ready of recognition and do not come into a discussion of early diagnosis.

Together with the study of the points above mentioned, the most valuable diagnostic help is obtained from an examination of the body reflexes, the cerebrospinal fluid, the blood and the urine. At present the feces and sputum are of but little value for such purposes, but new methods may later show the presence of the virus both in the alvine discharges and in the buccal secretions.

18. Reflexes. During the irritable stage both the Achilles and patellar reflexes are exaggerated, but they soon become very sluggish or disappear, usually one leg showing the effect first. The Achilles reflex was found exaggerated with absent knee jerk in some of Zappert's cases. If the pyramidal tract is involved, a positive Babinski with exaggerated reflexes or even ankle clonus may occur. Great care in ascertaining the presence or absence of reflexes is essential to accurate diagnosis. Because of the variations possible in muscular involvement, unusual combinations of reflexes are possible. The skin reflexes may disappear or be modified or elicited with difficulty.

Both Wickman and Linder and Mally report the absence of abdominal reflexes as a frequent finding. Since spastic conditions of the muscles occur along with the flaccid paralyses, one limb may show exaggerated reflexes with their absence in the other, while in some cases the absence of a knee reflex has been pointed out by Wickman and Ed. Müller as the only tangible symptom of the disease.

The Kernig sign is occasionally found, but when present is not as characteristic as that of Brudzinski, which consists of a prompt flexion of the legs upon the abdomen when the head is flexed forward upon the sternum.

19. Cerebrospinal Fluid. Lumbar puncture has been somewhat disappointing from the standpoint of positive diagnosis, although the examination of the cerebrospinal fluid gives much information and may permit an early distinction to be made between poliomyelitis and certain forms of meningitis. Numerous records are now available and most investigators (Flexner and Clark, Starr, Gay and Lucas, Frissell, Merzbach, Koplik, Spieler, Krause, Müller, Netter, Morse, Draper and Peabody) agree that in the early, particularly the preparalytic stages, the fluid is at a fairly high pressure, is clear or slightly turbid or opalescent with increased albumen, some globulin, containing at first from a few to as high as 90% polymorphonuclear leukocytes, but principally, then and later, an increased number of lymphocytes, and may show a central thread of clot on standing; and is bacteria free. It may be practically identical with the cerebrospinal fluid of tubercular meningitis, and where tubercle bacilli are not to be found no differential diagnosis can be made from its examination between the two conditions. Some cases of epidemic cerebrospinal meningitis are slow to present turbidity and specific organisms in the cerebrospinal fluid, but most of them, together with meningitis due to the influenzal bacillus, pus cocci, etc., are readily distinguished. In a suspected case, a prompt lumbar puncture the earlier the better, is to be uniformly recommended, although the information obtained has often only a purely negative value.

20. Blood. That the leukopenia first believed to be constant may be preceded or followed by a period of leukocytosis has been found by Frissell, Morse and Koplik. Increases in the polymorphonuclears may also occur later, perhaps as Flexner thinks from lesions in other organs than the nervous system.

In a case of the acute ascending type seen with Dr. T. M. Williams a leukocytosis of 16,400 was present and at autopsy the whole gastrointestinal tract and spleen showed evidences of some inflammation.

The relative lymphocytosis found with the leukopenia is of but little value in young children

where the lymphocytic count is apt to be high, and in adults in California, where lymphocyte counts in general are higher than those usually noted elsewhere. Draper and Peabody in a recent study of a considerable number of cases found an increased number of leukocytes up to as high as 30,000 in practically all of their cases with an increased relative number of polymorphonuclears (10 or 15%) and a corresponding decrease of lymphocytes. Hammond and Sheppard report similar findings in a few Massachusetts cases.

21. Urine. The comparatively slight damage ordinarily sustained by the renal epithelium in poliomyelitis makes urinary examination of but little positive value, except to aid in the interpretation of the symptoms such as coma, headache, etc. Bacteriological investigation, particularly when the urine is retained, is apt to show some organisms and to add to the difficulties of diagnosis. It is not to be forgotten that the presence of bacteria under such conditions in no way negatives the fact that the primary trouble is in the central nervous system, for we recognize how readily bacteria invade the genito-urinary tract under such circumstances, particularly in the presence of an abnormal gastrointestinal condition.

22. Serum Diagnosis. Especially since Netter and Levaditti and Andersson and Frost found antibodies in the blood of abortive cases, the hope has grown that in serum diagnosis the key to an early recognition of the disease will be found. The neutralization of the virus by mixing it with the blood of poliomyelitics is readily proved upon injection into monkeys, but unfortunately at present some time must elapse before its effect can be known, and from the standpoint of early diagnosis and treatment it is as yet of little value.

EARLY RECOGNITION OF THE VARIOUS TYPES OF POLIOMYELITIS.

I. Spinal. The foregoing description of the paralytic stage largely applies to the ordinary spinal form of the disease and need not be further reviewed.

II. Acute Ascending Paralysis (Landry's). Except for a shorter and stormier onset, these cases present in rapid succession many of the features of the spinal cases. They are more apt to occur in young adults and explain the higher death rate with increasing age. While there are descending forms, as a rule the paralysis begins in the legs and the destructive process rapidly climbs up the cord leaving functionless cells in its wake. When the thoracic muscles lose their power, diaphragmatic breathing occurs, and when the phrenics fail, death takes place in spite of attempts at artificial respiration. No more remarkable clinical picture presents itself than that of a healthy appearing young person with clear consciousness and intact peripheral sensation, with labored diaphragmatic breathing, but with absolute inability to move any except perhaps the most distal portions of the limbs, and physicians see but few more distressing sights than the death of such a patient.

That most cases of Landry's paralysis are due to the virus of poliomyelitis seems now well established.

III. Bulbar (Medin) or Pontine (Oppenheim). Typical hyperesthesia, sweats, and gastrointestinal conditions while occurring early in these forms are apt to disappear soon and leave the origin of the facial, hypoglossal and other paralyses obscure. Since the process is essentially more or less destructive, inflammation of the pedicle of the brain, any one or any group of the cranial nerves centering there may be involved. Even the severe disturbances have a good prognosis and the feebler ones are apt to be of such short duration that they are discovered only by painstaking and frequent observations. It is probable that some of the cases of so-called ptomaine poisoning with disturbances of swallowing and body pains are in reality unrecognized poliomyelitis of this type.

IV. Encephalitic or Cerebral. Hemiplegias of both the spastic as well as the flaccid varieties occur early or as the primary symptom in a certain proportion of cases, and there is much to support the claim that the disease should uniformly be known as polioencephalitis. For early diagnosis it is necessary to remember that extensive cortical lesions may occur, usually, but not necessarily combined with definite spinal involvement. In a case seen by me paralysis of the whole left side, excepting the muscles about the eye and forehead came on suddenly in a one year old baby after a short febrile period inaugurated by vomiting and there was some spasm of the muscles of the right side of the face. The left knee jerk was exaggerated, the right normal. Both the Babinski and Kernig signs were absent. The foot was drawn up and the fingers drawn in upon stroking respectively the sole or palm of the affected side. Sophian considers MacEwen's sign of hydrocephalus, the wooden, typmpanitic note from percussion of the frontoparietal skull region, as an important aid to the diagnosis of cerebral cases or those which he roughly classifies as "polioencephalitis."

V. Ataxic. When ataxia appears as an acute symptom in a child it may well indicate that the early damage of the virus of poliomyelitis has fallen upon the cerebellum, portions of the cord controlling the muscular sense, or the peripheral nerves particularly of the legs. While Medin and later Wickman consider it a distinct type, Zappert classifies these cases with the bulbar forms. A moderate degree of ataxia is a fairly common feature of the early stages of severe attacks especially when the lower limbs are affected.

VI. Polyneuritic. Marked sensitiveness of the nerve trunks, especially tenderness of the sciatic on stretching, occurs in some cases. When this follows angina it is apt to be mistaken for a peripheral polyneuritis of some other origin. Differentiation except perhaps by the serum test is impossible.

VII. Meningitic. Evidence is accumulating that there is a definite meningeal inflammation in all forms of epidemic poliomyelitis but in some cases the symptoms of it predominate and in some

epidemics a large proportion of such cases appear. The manifestations are often severe vomiting, headache, painful rigidity of the neck and back, jerking contractions of arms and legs, convulsions, both clonic and tonic, strabismus, and unconsciousness. The Kernig sign is apt to be present with a well marked tache cerebral; and photophobia, and irregular pupils and a deviation of the tongue have been noted by Merzbach.

Koplik has reported a series of most interesting cases showing the great difficulty of diagnosis where with meningitic manifestations, ocular and facial nuclei are involved but considers it characteristic of poliomyelitis that during the first day of fever the child is apt to seem well and to be up and that there is a gradually increasing somnolence with the addition of more meningitic symptoms. Headache, vomiting, great fatigue, somnolence after the temperature has fallen to normal, more or less hyperesthesia point to a poliomyelitic origin. The above together with a study of the cerebrospinal fluid and the backgrounds of the eye (normal in poliomyelitis) are most valuable in avoiding confusion with tubercular meningitis.

VIII. Abortive. With greater knowledge of the disease there has been a striking increase in the relative number of abortive cases reported.

No distinction can at the time be made between the preparalytic stage and the abortive forms and the factors previously mentioned must all be carefully weighed. Wickman describes the following four abortive types, together with mixed types of them.

(1) Those presenting the features of general infection.

(2) Those with meningismus-like symptoms.

(3) Those with peripheral and body pains—"influenza-like."

(4) Those with gastrointestinal manifestations. Headache, stiffness of the neck, limb pains and striking lassitude are practically uniform findings in abortive cases and any of the other symptoms mentioned may be found, the paralyses lasting for such short periods that they are often unrecognizable or misinterpreted.

DIFFERENTIAL DIAGNOSIS.

To enumerate even the names of all of the diseases with which epidemic poliomyelitis has been confused would require a long list varying from rachitis to sinus thrombosis. The acuter stages are most apt to be considered as initial symptoms of the exanthemata, or meningitis or as those of some simple gastrointestinal complaint. The most important differential points have already been enumerated in discussing the symptoms. The thought of hysteria in the clinician's mind may prevent the proper emphasis being laid upon symptoms noted. A few differential points are worth mentioning. In meningitis the pain is less constant, the convulsions more frequent, the stupor more prompt and profound, the rigidity of neck more persistent and prolonged, the paralyses more varied and irregular and the Kernig's sign more apt to be present. Then the blood and cerebrospinal fluid present the well-known characteristics. Scorbutus or rheumatism both must be ruled out in painful affections of the limbs especially in babies. The presence of abdominal pain with spasticity of the abdominal wall is apt to lead to an operation for an appendicitis. Ed. Müller describes such a case. Saltou found in the Plymouth epidemic that the acutest cases were thought to be due to sunstroke. Poisoning or suicide is not an unreasonable conclusion as to the cause of death in the acuter cases of the Landry's type.

In general it should be the aim of the clinician to attempt to eliminate poliomyelitis in all of the ordinary febrile states, above all if they present symptoms distinctly referable to the nervous system. It is well to remember that in any epidemic there is a tendency for one of the types, respiratory, gastrointestinal, etc., to predominate. One must not seek though for a single picture but with the intricate pathology in mind look for any one of a series of conditions which may dissolve readily either into a more complicated or a simpler symptom-complex or may stop abruptly at any point. It is this variability together with the firm association of the disease with paralysis, both in the mind of layman and physician, that is apt to lead to doubt as to the validity of a diagnosis in the preparalytic period and in the abortive cases. With age no longer a factor (for cases from four months to sixty-four years were reported in the Washington epidemic alone), with paralysis no longer needed for diagnosis, with the certainty that a lasting paralysis may follow the most innocent of prodromal symptoms, with the wide range of clinical possibilities resulting from the destructive processes in the nervous system we now have certainly no more complicated and no more important problem than the early diagnosis of epidemic poliomyelitis.

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THREE CLOSELY ASSOCIATED CASES OF ACUTE POLIOMYELITIS.*

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The plan of this paper is to present three closely associated cases of acute poliomyelitis and to attempt to show clearly the relationship between three distinct types and their epidemiology. I wish also to refer to the animal experiments carried on by Prof. Hans Zinsser from material derived from Case 1, and to state the anatomic changes in the cord of Case 1, as demonstrated by Prof. A. W. Meyer.

Case 1 represents the ascending or so-called Landry's type resulting rapidly in death.

Case 2, the abortive type resulting in complete recovery.

Case 3, the spinal type resulting in permanent paralysis of one leg.

With the possible exception of an obscure death in the community,* Case 1 was the first case of a small epidemic which occurred in Palo Alto, California, during the months of November and December, 1911.

Case 1. Strong, healthy high-school girl, 17 years of age, who had never been sick. She had many social engagements, was a frequenter of ice-cream parlors, and was often up late in the evenings.

First day: Came home from school at noon with distress in stomach. She had been up late the night before and had eaten candy.

Second day: Did not go to school; had pain in stomach and vomited, but was able to go out that evening.

Third day: Pain in abdomen just under ribs. Came to my office in afternoon. Stomach area tender; history and symptoms of acute indigestion. Temperature normal. Was put to bed that afternoon and given a laxative, which acted freely on the following day. No food until the next day, when she was allowed very little.

Fourth day: Remained in bed, but felt better.

Fifth day: Much better. Got up at noon and went down town. Was up until late and did not sleep well.

Sixth day: Remained in bed during the forenoon, but was up to receive a caller in the afternoon. Went to bed early and passed a restless and sleepless night.

Seventh day: I was called to see her. Patient complained of pain in lumbar region and said she felt extremely weak. Temperature normal; had no appetite and was constipated. I could discover no explanation for her condition and ascribed it to the fact that she was tired out. I learned later that she complained of some pain in legs and twitchings of leg muscles during the day. That night I gave her calomel and jalap followed by citrate magnesia in A. M.

Eighth day: Condition much the same as the day before; still constipated and a purgative enema produced but a slight movement; complained of great weakness in her arms and legs and wanted help when she got out of bed to use the commode. Severe headache and backache; had no appetite; no fever. She appeared very anxious about her condition. That night was given 5 gr. of veronal twice without result; also given more laxative.

Ninth day: After another sleepless night, she said it made her tired to breathe and that her arms felt heavy. Headache and backache more severe. Her throat felt sore and there was some distress on swallowing. There had been no result from laxative given the night before, and she had not urinated. Examination showed flaccid paralysis of both legs, except that the ankles and feet retained their power of flexion and extension. There was a marked Babinsky on both sides, otherwise reflexes absent in both legs. Arms very weak, though grip was fairly good and equal. Tactile sensation and sensation of heat and cold and of position normal. Her pupils were contracted and her lids were inclined to droop. Her neck was slightly stiff and tender, especially on deep pressure. She could rotate the head, but had pain in trying to bring the chin down. Her mind was perfectly clear; temperature elevated; pulse and respiration rapid (no record kept); abdomen distended and tender on deep pressure. It was now evident that I was dealing with a very sick patient, instead of a girl suffering the mental and physical results of indiscretions in eating and doing and who was fretting over the fact that she would be unable to attend the big intercollegiate football game which was to come off within a few days. It was also evident that she was suffering from

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

* The case referred to has been, within the past week, positively diagnosticated by sections made from the medulla as poliomyelitis.

some sort of paralysis which was gradually increasing and which was of the so-called ascending or Landry's type.

A high purgative enema was followed by a small bowel movement. Sixteen ounces of urine was obtained by catheter—examination some hours later—yellowish red in color, Sp. Gr. 1026, acid; trace of albumen; no sugar; considerable mucus; numerous long chains of streptococci and many bacilli. Two hyaline, one fatty, and one waxy cast found on careful microscopic examination.

Evening: T. 103.2°, P. 120, R. 20. Patient practically helpless; slept better that night than she had for several nights.

Tenth day: Morning—T. 102.4°, P. 80. Patient seemed brighter and said her headache and backache were gone. She had no pain except in her neck when her head was elevated and in her throat when she swallowed. She was extremely fatigued and breathing was becoming a tiresome effort. She was quiet, but remained sleepless throughout the day and following night.

Paralysis about the same as the previous day, except that possibly the arms were weaker. No satisfactory bowel movement and catheterization necessary. Patient did not complain of any pain, but was unable to sleep during the night. Blood showed white cells 16,400, with 66% polymorphonuclears.

Eleventh day: Morning, T. 102°, but fell to 98° in the afternoon; resp. 26, but continued to get more rapid, becoming shallow and labored in the afternoon and evening; pulse was strong, but continued to grow more rapid; arms moved with difficulty, but wrist movements were free; no costal breathing, the respirations being entirely diaphragmatic. At times there was a peculiar tremor of the chin which grew more marked in the afternoon. Bladder now under control, though urination was frequent. Bowels moved slightly of own accord.

At 4:30 p. m. patient was seen by Professors R. L. Wilbur and Hans Zinsser; symptoms and physical signs as above stated.

A lumbar puncture showed the cerebrospinal fluid to be under pressure, slightly turbid, containing many lymphocytes, with later a small whitish central coaguleum. It was submitted to Prof. Hans Zinsser for examination and he reported it free from bacteria.

Patient complained of pain in neck, back and legs when turned on side to do puncture. In evening complained of pain in neck and shoulders when head was moved. There was progressive involvement of the medulla and respirations became more and more difficult. There was no effort on the part of the accessory muscles of respiration to assist the weakening diaphragm. Cyanosis began gradually to develop. Dullness appeared to the right of the sternum and a systolic murmur was heard over the tricuspid area.

Patient was very much perturbed, and with an almost inaudible whisper begged for something to relieve her breathing. She complained of thirst, but was unable to swallow. These were the last complaints she made before her voice failed entirely. After that she still continued to move her lips. Breathing ceased about 11 p. m.—the heart continued to beat for some time afterwards.

Prof. Wilbur and I spent the last few hours at the bedside, but could give no relief. The patient within an hour of death showed the following picture:

(1) Mental condition normal, although unable to express herself by word or sign, except by moving her lips, or opening and shutting her eyes.

(2) Complete paralysis of all the voluntary muscles of trunk and limbs, except the flexors and extensors of the hands and feet.

(3) Paralysis of the costal and accessory muscles of respiration.

(4) Paralysis of deglutition and phonation.

(5) Bladder under control.

(6) Abdomen distended.

(7) Pupils contracted; lids drooping; eyes inclined to turn up.

(8) Diaphragm acting with difficulty.

(9) Heart acting strongly, but becoming dilated.

Death was due to bulbar paralysis involving the respiratory center.

Only a partial autopsy could be obtained, and the skull was not opened. The cord, however, was removed and submitted to Professors Zinsser and Meyer. Prof. Zinsser has reported the results of his experiments. In his report he states that he injected a portion of the cord of this case into the subarachnoid space of a monkey, which subsequently died with symptoms similar to those of the patient. This monkey's cord shows the same lesions as are found in the cord of the above case.

To Prof. Meyer I am indebted for my report on the pathology, gross and microscopic.

Specimen in gross. Meninges normal. Cut surfaces of the formalin hardened cord in the lumbar region are dotted with brown spots, some large enough to show clearly that they are hemorrhages.

Microscopic Examination. Cervical Cord. Congestion; no definite lesions.

High dorsal cord. Meninges; only very slight round cell infiltration over the posterior fissure. Infiltration extending into fissure to gray matter, slightly involving posterior gray commissure. In gray matter there are a number of small hemorrhages in posterior horns and one in anterior horn of left side; these are not surrounded by round cells and the pervivascular round cell infiltration usually discovered is not in evidence. White matter normal, except for a very marked congestion of vessels.

Lumbar cord. Many small hemorrhages in gray matter, particularly in the anterior horns. Marked congestion of meninges.

Lumbo-sacral cord. Hemorrhages in gray matter with a little round cell infiltration around some of the hemorrhages. Marchi under special precautions revealed no degeneration in any of the columns of the cord. This was confirmed by Weigert preparations.

The abdominal organs showed the degenerative changes noted by Flexner as characteristic.

Through the courtesy of Dr. Philips I report:

Case 2. Strong, healthy high-school girl, aged 16. A very intimate friend of Case 1; they were together continually until Case 1 was confined to her bed; they frequently kissed each other, and this patient wore furs of the first patient several times during the week.

On the day following the death of Case 1, Case 2 did not feel well, but went to a football game in the afternoon. That night was restless and sleepless.

Second day: Felt worse and had fever; had no appetite; spent most of the day lying down; that night was restless and sleepless.

Third day: Was more feverish; pain in left arm which was so acute as to prevent any use of the arm; headache, backache, stiff neck, sore throat; deglutition difficult on account of pain in throat, which seemed swollen. Restless and sleepless; cried out at times when she dozed off for a moment. Had no appetite and was constipated. Later in the night began to perspire freely.

Fourth and fifth days: Symptoms continued about the same as on the third day.

Sixth day: Awoke much better, but still had a headache. Got up and went to the bathroom, but was very weak.

Seventh day: Was up and about the house;

left knee was very weak and continued to bother her for some days.

Tenth day: Was able to go to school, although she did not feel at all well.

I believe you will admit that I am justified in considering this an abortive case, when we take into account all its symptoms and its direct relation to the previous case and to the case to follow.

From Nov. 25th to Dec. 3rd, she was out of town. On her return, two weeks after her illness, she and Case 3 began to occupy the same bed.

Case 3. School boy, aged 11 years, brother to Case 2. One week after he began sleeping with Case 2 he had toothache in a decayed tooth.

Second and third days: All his teeth ached at intervals and he had occasional pain in right thigh; went to school, however, and played football all his spare time.

Fourth day: Came home from school at noon with a sharp pain under ribs on right side. Went to bed, but awoke two hours later feeling perfectly well; went out and played ball, but came in at five o'clock with return of pain under ribs.

Fifth day: Perfectly well; went to school; played football as usual.

Sixth day: Went to school, but did not play football, because father had forbidden him. Felt well all day and went to bed at the usual hour feeling perfectly well; awoke in the middle of the night with a severe pain in legs and lumbar and sacral regions. He cried for hours with the pain. These pains subsided somewhat toward morning, but he was very restless and unable to sleep.

Seventh day: Had some pain all day; got up for breakfast, but went to bed immediately afterwards. In evening pain seemed to leave back and legs and to work out at toes; then he felt a peculiar numbness in right leg; did not sleep that night because he had a high fever and was very restless. At 11 p. m. got out of bed to urinate and fell to the floor; he then discovered that he could not use his right leg. Had frequent and painful micturation during night; had headache and shooting pains at times in both legs.

Eighth day: At 11 a. m. I saw patient for the first time. His complaints were:

That he was unable to move his right leg and had severe shooting pains down the back of both legs, and a severe headache mostly occipital in character. His neck was stiff, painful and drawn back, so that although he could rotate his head he was unable to flex his chin in order to take a drink of water. His throat was sore, it hurt him to swallow, and he had occasional shooting pains down the sides of both arms, accompanied by sudden and painful contractions of the muscles of the forearms in such a way as to supinate the hands and flex the third and fourth fingers. Micturation was frequent and painful; he had been constipated for two days although his mother had given him several pills. He felt very feverish, restless and unable to sleep.

At 2 p. m. that day he was also seen by Prof. R. L. Wilbur.

Patient was a well nourished muscular boy; very much perturbed; Temperature 103°, pulse 120, head retracted, neck rigid and tender on pressure; could rotate head easily, but body came up arched when attempt was made to lift head forward. Flaccid paralysis of right leg, though patient could still flex and extend second and third toes. Reflexes normal except loss of tendo achilles and knee jerk on right side and a slowing of the right cremasteric, with a positive Babinsky. Left leg slightly spastic with an irregular response of knee jerk.

Pain when Kernig's sign was sought for; this was quite evident on left, but not on right side. Pain on deep pressure especially in popliteal spaces and calves of legs. Tactile sensation and sensation to heat and cold normal.

A hot pack was ordered. Gave urotropin gr. 5 q 4 h. Menthol gr. IV, of vaseline oz. 1 was applied to nasal mucous membrane. Patient soon began to perspire in pack and continued to perspire considerably for next 24 hours. S. S. enema gave very little result. Calomel gr. 2½ was given that night. All symptoms of distress were soon greatly relieved after perspiration began and late that evening most of the stiffness of neck had disappeared.

Ninth day: Temperature normal in the A. M. Symptoms of distress greatly relieved. Magnesium sulphate was given and later an S. S. enema, but no satisfactory result. Distension of abdomen. Frequent micturation. Urine examination negative. Temperature in P. M. 102°. Unable to move second and third toes as he could in morning. Plantar and cremasteric reflexes gone on right side. Occasional pains down back of legs.

The following day the temperature reached the normal point to remain; he began to sleep well, eat well, and feel well. For several days he had frequent micturation and his bowels moved by enema only. For some weeks he suffered from occasional shooting pains in his leg, which was tender to deep pressure—markedly so in the popliteal space and the calf.

Patient was kept in bed for three weeks. He has since been using crutches and getting around in a lively fashion. His leg has been massaged regularly; he has some power in his adductors and abductors, but the flexors and extensors of the leg are gone. Can move second and third toes at times, but control is very uncertain. Leg is apt to be cold from knee down. There is considerable atrophy.

The pathology of cord in acute poliomyelitis shows chiefly:

(1) Congestion.
(2) Hemorrhage.
(3) Round celled infiltration.
(4) Degeneration.

The hemorrhages are mostly confined to the gray matter, but not necessarily so. The hemorrhages in my case appear to be fulminating or sudden in character; they are either around vessels or in the vicinity of vessels; if around the vessels they may cause total or partial collapse of the vessel walls.

These hemorrhages are usually definitely outlined, but in some parts we find them diffuse in character. They are irregularly scattered throughout the cord and are also very irregular in size. It thus becomes evident why our clinical pictures appear in such great varieties. The abortive case may be explained by the mere congestion.

The apparently grave case which completely recovers may be due to congestion, small diffuse hemorrhages and to larger hemorrhages which press upon but do not destroy nerve cells.

In the grave or slight paralysis which remain permanent the hemorrhages are sufficient to destroy the nerve cells. It is in these cases that we should later find degeneration going on.

In my case, and in Prof. Zinsser's monkey, there were long segments of the cord where no lesions could be found. This, I take it, explains

why so many cases of so-called Landry's paralysis without lesions are reported, thus making it possible to continue the name Landry's paralysis.

My study of the clinical pictures of these cases, together with the pathology, has led me to the following conclusion as regards treatment:

1. Absolute rest.
2. Free catharsis.
3. Counter-irritation along spine.
4. Hot pack.
5. Quarantine strictly for three or more weeks.
6. Observe closely the hygiene of the mouth, nose and throat by using as a mouth wash and gargle a solution of peroxide of hydrogen 1 part, Dobell's solution 1 part, water 2 parts, and by applying to the nasal mucosa

℞ Menthol gr. IV
Oil Eucalyptus m. XV
Acid Boric gr. XX
White Vaseline 1 oz.,

peroxide of hydrogen and one per cent. menthol being fatal to the virus which is present in these membranes.

7. I shall administer urotropin in large and frequent doses with the hope that it may in some way combat the virus when excreted into the cerebro-spinal fluid and through the mucous membranes.

8. I shall observe blood pressure, and if high shall resort to phlebotomy in an effort to reduce the blood pressure in the cord and thus prevent hemorrhage and congestion.

9. I shall follow the same treatment with all suspected cases and shall administer urotropin and observe the same care of the mouth, nose and throat in all exposed cases and in all attendants.

THE DREAM-STATE OF DELIRIUM TREMENS AND THE INADEQUACY OF THE CALIFORNIA STATUTES IN NOT COVERING CERTAIN CONDITIONS OF IRRESPONSIBILITY FOR CRIME, EXEMPLIFIED IN AN UNUSUAL CASE.*

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Before taking up the particular form of dream-state which my case illustrates, I wish to make a few remarks concerning the physiological processes from which it is evolved.

Man is influenced by the outer-world through stimuli affecting his peripheral sense organs. These organs through their nerve-connections influence the center of perception in the cortex, which in turn forwards the impression through association-fibres to the center of conception in the gray matter of the brain. When the stimulus ceases to act the function in the center of conception is discontinued—i. e., as far as the direct influence upon it is concerned. There is left behind, however, a latent conception—the so-called memory-picture. This may become active or re-awakened by the activity of the original stimulus or others allied to it, or through the action of associative centers within the brain.

When the concrete memory pictures become defective through a disturbance of the recording faculty, holding sway over the latent conceptions, we have what is called forgetfulness. When a disturbance in the recording faculty extends in all directions, from the loss of a few memory-pictures to the loss of a series of related memory-pictures and the ideas associated with them, we have before us an amnesia or loss of memory. This becomes complete when it leads to the forgetting of all or nearly all related experiences of a certain definite period of time. When the amnesia covering a certain period of time becomes complicated with a clouding of consciousness, during which the individual goes through a varying amount of psycho-motor activity, we are dealing with what has been termed a dream-state (Dämmer-zustand) or, less appropriately, a disturbance of consciousness or unconscious state. The amnesic period may vary from a few minutes to several months, and it may be possible to definitely fix from what hour and minute and to what hour and minute the dream-state lasted. Sometimes the amnesic period will exactly coincide with the duration of the sub-conscious acts, at other times it precedes the accident, shock or convulsion, etc., which may usher in the dream-state, and then becomes a retrograde amnesia; or it may affect the period immediately following the subconsciousness and become antero-grade in form. The amnesia may be retarded when immediately after the dream-state the memory of the events occurring within the subconscious period is well preserved, while a short time afterwards amnesia is found to be complete for these occurrences. In many of the cases where a dream-state has existed the amnesia for such period remains unaltered or permanent. In some cases, however, the memory-pictures for the period become partially, if not completely, re-established. These characteristics of amnesia suggest an analogy to dreams experienced in health. During a natural sleep the latent conceptions—the old memory pictures—stored away in the cortical center, are started into life and flit quietly by as pale shadows, or they assume a marked distinctness and make a wild dance through the kingdom of dreams, which activities may sometimes later be remembered by the awakened slumberer as being as horrid and absurd as any psycho-motor acts actually performed during a dream-state. There is in fact a gradual transition from the natural sleep through its various pathological modifications to the real dream-state.

We meet with the following pathological manifestations of sleep:

1. Somniloquy—talking during sleep.
2. Somnambulism—walking during sleep.
3. Wakeful sleep—when an awakened person performs a series of apparently normal acts, then falls asleep and does not remember anything when he gets up the next morning.
4. Dream-wakefulness, the "Traum-wachen" of

* Read before the San Francisco County Medical Society, May 14th, 1912.

Ziehen,[1] in which, after an apparent awakening, there is a persistence of the ideas of the dream, mingled with new hallucinations and illusions, and some primary fallacious ideas.

5. A morbid form of profound drowsiness (Schlaf-trunkenheit) which may precede the falling asleep or follow the awakening. In this we have a peculiar transitional stage between sleep and wakefulness, in which the landmarks of a dream-state may be present. The "sleep intoxication" may be so profound that the person, not normally oriented and not rid of the delusional ideas incidental to the preceding dream, has committed acts of violence on persons sleeping in the same room whom he had failed to recognize.

A dream-state with its subsequent amnesia may be met with in attacks of migraine and neuralgia and in connection with uterine labor-pains when pathological states complicate the labor. The dream-state may also be artificially induced by hypnosis. The typical dream-state is, however, especially met with in hysteria and epilepsy. It may occur after severe head-trauma with commotio cerebri, after severe nervous shocks and after acute intoxications as with carbon monoxide gas. It may also follow attempts at suicide by hanging and may occur in profound alcohol intoxications.

The forms of alcoholism, in connection with which dream-states may occur, are the cases of so-called pathological drunkenness (the pathological form of acute alcoholism) and delirium tremens.

The latter has been defined by Ziehen as a paracute hallucinatory paranoia to which the chronic alcoholist is exclusively subject. The drinking is most often confined to whisky, developing less frequently in the chronic wine-drinker and exceptionally in the chronic beer-drinker. The excesses in Baccho must at least have extended over a period of four years, says Ziehen. In this the individual predisposition no doubt plays a great role. A single alcohol-excess has for instance, exceptionally been known to produce a delirium tremens attack in children. Sometimes an extreme alcohol excess, a sudden abstinence from the accustomed quantity of liquor or some intercurrent disease will occasion the attack and it is frequently preceded for 1 to 8 days by an epileptic attack. The delirium usually shows a prodromal stage of exciting dreams, motor restlessness and fatigue, marked tremor, anxiousness, elementary sensory deceptions, irritability, etc., and reaches a crisis lasting as a rule 3 to 5 days, but sometimes considerably longer, during which perverse perceptions of the different senses are observed, the visual hallucinations and illusions usually predominating. These show characteristic peculiarities in great variety. They are of an anxious nature and show great motility and multiplicity of animate and inanimate objects of all sizes, and they are combined with a disoriented state as to time and place. To this sense-perversion delusions and fantastic ideas become added which are presented in a more or less incoherent manner. The condition of the affects varies with the character of the sense and idea-disturbances, while the motor restlessness shows a typical occupation-delirium and an aimless wandering. The patient is sleepless and shows certain physical symptoms, such as a varying rise in temperature, variations in the character of the pulse and blood-pressure, as well as gastro-intestinal, vasomotor and nervous disturbances. The delirium terminates usually in a critical sleep of 10 to 24 hours' duration, from which the patient awakes usually free from anxiousness and hallucinations, but not with full insight and understanding of the recent past, though without a complete amnesia, except where complicated with epileptic attacks.

This is very briefly the course of the attack of an ordinary delirium tremens. In very exceptional instances, however, as in the case which I am about to relate, symptoms of a certain profound character become added to the restless motor activity, the disorientation and hallucinations, so that the individual goes through the psychomotor activity in a subconscious or dream-state. The condition of our patient during the critical part of the dream-state was unfortunately unobserved by others, but his actions during this state are so clearly reflected by the results of his activity, and corroborated by his own statements after a partial recovery, that one is able to draw a complete picture of the dream-state. The case is as follows:

Gus Arrivey was born in Stockton, aet. about 27 years, single, occupation, printer. His father was born in Louisiana, his mother in Ireland. His father died when he was a child. He had been living with his mother in a small dilapidated cottage. His mother, aet. 64 years, who also indulged in liquor but not to excess, was working in a laundry. According to the prisoner's statement since his recovery, there is no neuropathy in the family, but he has known very little about his relatives. He was a bright boy at school which he left when in the 8th grade. According to the printer under whom he had worked he was a good workman. He was given liquor when 5 years old, and became intoxicated the first time when 12 or 13 years old. In September, 1910, after a prolonged debauch he became delirious and was taken to Dr. Clark's Sanitarium where he remained from September 30th to October 8th, quickly recovering from the delirium tremens attack. In the spring of 1911 he again presented symptoms of delirium tremens and was found by a policeman sent to arrest him, in the top of a tree into which he had climbed to rescue his mother (visual hallucinations). Of late years during "sober" intervals he would take a glass of whisky, wine or beer at noon, a couple of beers or wine after work was done—dropping into 2 or 3 saloons on his way home—and a glass of beer after supper. When idle he would frequently go on a spree, averaging about once a month, and had been put in jail seven or eight times for drunkenness. He had been idle for about a month before he was arrested and during this time had been drinking more or less to excess. He was not known to have been subject to epileptic attacks.

Early in the morning of the day before his arrest he got up to look in the "doctor-book" for something to make him sleep—he had been sleepless all night. His mother suggested that he had better see a doctor, which he did, and brought home a medicine (a bromide and chloral mixture) of which he took a dose every 4 hours, finally falling asleep at 4 p. m. When he awoke late in the evening he found his mother asleep and the supper cold. He says that he did not eat the supper but took a dose of medicine and went to

sleep again. What happened after that seems a dream to him. He remembers but little about it.

On Monday, December 4, 1911, a telephone message came to the police office at Stockton to send the patrol-wagon with an officer to a house where it was suspected a crime had been committed. When the officer arrived he found the dead body of a woman lying on the floor in one of the rooms. The body was covered up with rags, the woman's throat had been cut from ear to ear, her skull fractured and the abdomen opened, loops of intestines protruding from the wound. The son of this woman, Gus Arrivey, was found barefooted, coatless and hatless a block from the house, standing in water to his knees. Under his arm he carried a bundle afterwards found to contain a portrait of his mother and his mother's black shirtwaist. In the other hand he was carrying his mother's hat. Near the place where he was arrested, there was found a beaten and serpentine path, through the tules growing in an extensive hole in the ground, connecting with the slough. When asked by the officers where he had been, the prisoner said that he had been chased by niggers through the tules all night. After he had dressed himself he was brought in the patrol-wagon to the jail. On the way to the jail and for an hour afterwards he seemed very drowsy—had slept part of the time. About the noon-hour of that day he was asked the following questions:

Q. What is the matter, Arrivey, what trouble have you been into? A. "I haven't been into any."

Q. Where is your mother now? A. "She is up in this business going around in the jail—in that new flying machine. She went up in the spirit."

Q. Where is her body? A. "Her body lies over in the morgue, I guess."

Q. How did she get killed? A. "I killed her. There was a gentleman, some kind of a religious man. I think I met him on Sutter and Market streets. I forget how long ago. He showed me how to talk a sign-language—a sort of a whisper just by moving the lips. It took him no time to teach me that lingo. I talked through the ceiling a while ago. I talked to him at a distance when he directed me."

Q. To do what? A. "Kill my mother. I don't exactly remember when—some time late at night. He was in Mars* when he told me."

Q. How did you kill your mother? A. "First I think I took something on the table there and hit her on the head with it. I don't remember where I had been, or when I came into the room where she was. I don't remember what I had been doing that day. I hit her over the head with the glass, and he (the aviator) directed me to split open the womb with a knife. He wanted me to kill the baby. I beat her on the head with a hatchet and she screamed and hollered: 'Don't, Gussie'! and all that."

Q. Why didn't you stop? A. "I don't know. This fellow up there had a kind of power over me, and he directed me to do it and I done it."

Q. Where was the last place that you remember you were? A. "I don't remember. I can't tell just where I was."

Q. Where did you sleep last night? A. "I don't know whether I slept or not. I guess I must have slept."

Q. When was it that you killed your mother? A. "At night—night before last, I think."

Q. What day of the week was it? A. "That I could not tell you. I did not keep track of the days of the week."

Q. What did you do after you had killed your mother? A. "I don't remember what I done. I don't know if I went to sleep in the house or what I did with my shoes. I don't know if I spoke a word to my mother before I killed her, and I could not tell you how many times I struck her with the bottle. She was lying on the bed when I cut her in the womb—she was knocked out then. This fellow in Mars said she had a baby there. This guy wanted the baby out. He didn't want my mother's spirit to go to Mars with the child. After this I took her out on the back porch and cut her neck on the steps just to have it hang loose. I guess I was going to cut her head off" (saying this only after it had been suggested to him).

Q. How long after you struck her did you take her out there? A. "I think it was the next day—I am not sure." (He did it the same night.)

(He had pushed a washstand up against the front door toward morning after killing his mother.)

Q. Why did you do that? A. "Well, I didn't want the fellows outside to break in—the niggers who were after me. He (the man in Mars) said to me to protect my mother there (where she was lying)—so I put a washstand against the front door. In the back of the house I put the other things (other furniture) around my mother. (When he finally went away from the house he left the back door wide open.) The niggers told me they were going to break in the house. I guess that is why I happened to barricade the front door."

Q. What were you going to do with all those matches you had—were you going to set the house on fire? A. "No. They were going to burn me up. I took them with me."

Q. Why were they going to burn you up? A. "Because of my mother. There was a gang of niggers and two white fellows."

Q. How did you get the matches? A. "I got them home. I went home (he was home), washed myself and changed my clothes."

Q. Why did you do that? A. "I don't know. He (the man from Mars) claimed it was a kind of offering. I wanted to be clean—those others (clothes) were dirty."

Q. What kind of a man was this man from Mars? A. "I didn't get close enough to him—he was always in a machine."

Q. Did they knock at the door? A. "I guess they did."

Q. Did you let them in? A. "No, they didn't come in. I don't remember whether I opened the door or not. I spoke to the one I saw. He told me I would have to go out in the tules and be sacrificed."

Q. Why did you run away from them? A. "Well, they had clubs, hammers and sledges and there were 10 or 12 of them—all young men. I thought they would beat me up first with the clubs. I heard them talk but I didn't see them when I was out there."

Q. What were you going to do with the bundle you had in your arms when the officers arrested you, containing a hat, a shirtwaist and picture? A. "They belonged to my mother; they were going to be sacrificed in the fire on which I was going to be burned for killing my mother."

Q. How long after you killed your mother did they tell you that? A. "She was not killed that morning—it was the morning before I think—I don't remember."

Q. Was it not cold in the tules that morning? A. "At that time it was not very cold." (It was quite cold.)

Q. Was it raining? A. "I don't know whether it was raining or not." (It had been raining.)

Q. Were you there quite a while and what were you doing? A. "I don't know—jumping around trying to dodge those niggers."

Q. How many niggers were there? A. "I don't know, I was not frightened."

Q. Didn't you take something along to protect

* An aviator, Bud Mars, had given aviation exhibitions in Stockton about a month previous to this time, which may have occasioned the perverted idea-association.

yourself with? A. "No, I just had the pictures and my hat." (His mother's hat.)

Q. When the officers came did you tell them about killing your mother? A. "I believe I did and about the niggers being after me."

Q. Where did the niggers go after the officers came? A. "They hid in the tules."

Q. Were you afraid the officers were going to arrest you? A. "I didn't pay any attention to the officers. I didn't feel like I was scared of anything."

Q. Did you think about running away? A. "No."

Q. Did you and your mother have any trouble? A. "No, she would only scold me when I got a jag on."

Q. Did your mother scold you last night? A. "No, we never had any words."

Q. How often did you go on a jag? A. "Pretty often, I guess."

Q. Did you eat supper with your mother? A. "I don't think so."

Q. Did you ask your mother for money that night and did she refuse you? A. "I might have—I don't remember."

Q. What put it into your head to kill your mother? A. "I don't know."

Q. Did you realize that you were doing it when you were killing her? A. "I didn't seem to pay any attention to it."

Q. You wanted to kill her? A. "Yes, I wanted to kill her."

Q. You knew at that time that you were likely to be punished for it? A. "I didn't seem to know. I didn't give it a thought. I didn't think I was committing a crime."

Q. You realize now (about the noon-hour after the night of the crime) that you have been doing wrong? A. "Sure, I do, and I expect to be punished."

Q. What do you think that they will do with you? A. "Well, they will either give me 'life' or 'death.' I prefer death."

Q. You are ready to take your death sentence now? A. "I guess so. I don't like to stay in jail."

Q. How long after you killed your mother did you feel bad about it? A. "I guess after she saw me running around the field with the niggers after me."

Q. Was she alive then? A. "She was in this machine. She was crying and talking and calling her husband down."

Throughout this conversation Arrivey showed no emotion. He told his story as if he were relating what some one else had done. When he was visited at the jail on December 5th (the second day after the murder) he was nervous, showed fine muscular tremor in the hands—none in the face or tongue. He did not react to Lippmann's test. He was still disoriented as to time, date of commission of the crime, etc., and was confused as to what he had been doing of late. He said, "he had been in and out of the place (jail)—had been down on the waterfront. He was drunk yesterday" (was, of course, in jail then). Among other things he said: "After I had hit my mother, I came down town about 8 or 9 a. m. I struck her about supper time. I went into some saloons and then went home. I found her dead and bleeding on the bed. I put her on the kitchen floor and then went to bed myself and fell asleep. I woke up in the morning, dressed, washed and left the house, and went on another spree. I stayed on that spree a day or two or more. They (the officers) found my mother there. I wasn't at the house when the patrol wagon came, but they arrested me afterwards." When speaking of the man in Mars, he said: "I saw something like a star in the heavens and as if there was a searchlight extending from Mars to the earth—and I thought I saw a flying machine with a man in it, going up toward the star and coming down again. . . . The only person I remember seeing in the house besides my mother was a man of dark complexion standing in the back room, but he didn't say anything. He was a middle-sized man, wore a chauffeur cap and leggings. I saw no moving pictures, animals or men of extraordinary size. After I had done this to my mother, I think I remember feeling numb and stupid-like. I had no fear at all." When speaking of the mob, he said: "They were going to bushwhack me. I heard them say they had come to take revenge on me for killing my mother. They said I must first go through the tules, and as I passed through them I felt them striking me. They said they were going to break every bone in my body first and then kill me—after that I was to be burned on the bonfire. I could hear them making preparations for the bonfire. I heard them hollo, jump around, call names and say: 'We are going to fix the white trash.' They told me to bring matches—that if I had any spirit in me I would bring them—so I brought them two bundles. I heard them say to bring wood about the time the patrol wagon came." In the course of this conversation Arrivey frequently made confused statements as to occurrences at the time of the murder and showed that he was suggestible, acquiescing in remembering things which he apparently did not remember.

Four days after the murder the prisoner seemed brighter, remembered more definitely a few things that had occurred in the past, but in general his memory was indistinct and confused. On this date he said, when asked about the relations between himself and his mother, "I always loved my mother and she thought much of me." He claimed to have the following recollection of what happened after his arrest: "On the way to the jail I fell asleep and remember having the following dream: I was to be hung. I was put on a cot and taken on a boat for some distance. They were bringing me a flask of whisky and port wine to take with me. While in the boat I got a hemorrhage and was told I had consumption of the bowels—the blood was leaking out of my body until my stomach got to my backbone and the disease started to eat away my lungs, and all that was left was my heart and my chest filled with blood. I felt drowsy, was told to say my prayers—was getting stiffer and stiffer until I lost consciousness. Finally, I heard somebody say that I had died. Then I seemed to 'come to' and I was wondering why I was in a jail if I were really dead."

After the fifth day the patient seemed fully oriented and without hallucinations, but his memory of events of the recent past was not fully restored. When the case came to trial in the Superior Court on January 15, 1912, the opinion was given that the defendant was not responsible when he committed the crime—that he had committed the act while in a peculiar dream-state associated with delirium tremens; that he was at the time of the trial restored mentally, but that he might in the future again become a menace to surroundings, should his inebriety continue, which—if he were left to himself—it was likely to do. Under these circumstances the judge and attorneys deemed the safety of the community best protected—in the absence of a California statute covering cases like this—by allowing the defendant to plead guilty, to which he and his counsel agreed.

On February 1st, the judge found the crime to be murder in the first degree and Arrivey was sentenced to be imprisoned at San Quentin for the term of his natural life.

The homicidal acts in this case were committed by an individual of average intelligence, who for

years had been a periodical drinker and who had previously had several attacks of delirium tremens. At the time the homicide was committed he was in a subconscious state, completely absorbed in a sphere of thought centered about aural and visual hallucinations of a most fantastic character, and associated with a group of imperative ideas that he proceeded to carry out in a state in which he was totally deaf to all higher feelings and emotions. During the subconscious state he showed a restless activity combined with a cognizance of surroundings limited as to the degree of orientation, and disconnected from all other thought associations. The motor activity reached an extreme degree after the imperative ideas had been executed, while at the same time the cloud of subconsciousness became slightly lifted, allowing a simple realization of the nature of the act and its consequences, but this understanding was devoid of all ordinary feelings and emotions, dispossessing the individual of the ability to differentiate between right and wrong. The paralysis of the affects was especially evidenced by the fact that, although the delirious activity in the tules was in response to a realization of events of the greatest horror, it was unassociated with fear. The delirium finally terminated in a sleep or drowsiness of short duration from which he awoke with a clouded recollection of the occurrences of the eventful night, completely confused as to time and events in the past and presenting straggling hallucinations, visual in form and characteristic of delirium tremens, as when he saw the aviator from Mars after he had reached the county jail.

This synopsis of the symptoms in the case must, in my opinion, be interpreted as a dream-state associated with a delirium tremens, the one telescoped into the other so as to make the dream-state appear as if adorned with the cardinal elements, characteristic of delirium tremens, viz: the motor restlessness, the disorientation and the aural and visual hallucinations. The predominance of the aural hallucinations foreshadowed perhaps the possibility of a future development of an alcoholic hallucinosis, which in time would have shown itself had the continuation of the liquor habit not been abruptly terminated.

Immediately after Arrivey's arrest his memory was found defective as to certain occurrences before and during the homicidal act and he was not fully oriented. In fact there were present for two or three days after his arrest, memory-lacunae and other brief outlines of a relationship to the Korsakow symptom-complex.

The irresponsibility in the case is clearly demonstrated. It is in fact rarely that a criminal case, suggesting insanity, comes to trial, in which the thought-activity involving the question of responsibility is so definitely and dramatically reflected in the acts of a defendant as in this case. The matricide in its revolting details laid bare, as it were, the performance of an actor on the stage who played his role mechanically as if he were at one and the same time actor and audience.

The two criteria of responsibility applied to the question in Great Britain and its colonies and in this country are: The first or the knowledge test—knowing the nature and quality of the act or crime, and the second—knowing right from wrong. During a state of complete unconsciousness a person would be incapable of committing a homicide, being unable to perceive, except in such rare instances as when a mother or nurse suffocates an infant during sleep by rolling on top of it. In the case before us the consciousness was only clouded—its impairment may be said to have been what some German authors as Hoche,[2] have spoken of as a loss of "self-consciousness."

Gus Arrivey seemed to act as if at the time not fully realizing that there was an acting ego connected with the act itself. He was in a state of ambulatory automatism—in a mental twilight state. This dissociation of ego and act robbed him of the ability to comprehend the meaning of his crime—he was not possessed of the knowledge of right and wrong. The details of the matricide, especially the abdominal incision for the purpose of removing an imaginary fetus from the womb of his 64-year-old mother in obeying the mandate of an aviator from Mars, were in themselves an indisputable evidence of irresponsibility.

When the case came to trial, in fact, a few days after the crime had been committed, Arrivey appeared to have fully recovered from the attack of delirium tremens, to have a full moral appreciation of the homicide and seemed to feel remorse for what he had done. He was legally responsible when up for trial, but at the time he committed the crime he was irresponsible. Had he been possessed of money and friends the case would undoubtedly have taken another course. He would at most have been sent to an asylum, from which institution he would have been discharged after some months or a year or two. In the latter event the rights of the individual would have been safeguarded, but at the end of the short detention-period the safety of the community might have suffered by a possible or probable repetition of the crime. Under the circumstances of the case on the other hand, was it just to brand the individual without money and friends, with No. 3451 as an inmate of a penitentiary for life?

I think the case demonstrates that the California statutes do not meet the exigency of the circumstances. A law should be enacted to direct that a person convicted of a crime committed during an irresponsible state, and who, by reason of a probable return to this state, might again become a menace to society shall be sequestrated by commitment to an asylum or at most to a hospital for criminal insane, there to be confined for an indeterminate period—not less than five or ten years; and that he, at the end of each of a series of stated periods, be brought before a commission of psychiatrists, who shall determine when he is in a condition to be paroled.

I hope to enlist the interest of the Governor and members of the coming legislature in this subject so that the safety of the community as well

as that of the individual may be properly protected under such circumstances as have been here presented.

Discussion.

Hon. F. J. Murasky: Mr. Chairman and Gentlemen: I fear that I may seem to be rather an impertinent guest inasmuch as I have come without any idea of the subject for discussion or its range. I was very much struck with the thought, as Dr. Hoisholt read his paper, that the treatment of patients such as the one he described was very similar to the manner in which dependent and delinquent children were treated by society until recent times. The statute upon the subject of insanity on the books of California is the same as that with which she entered the Union. I do not think it has been altered since California became a state; it is simply the old law which has come down from the English commonwealth. It is the statute which exists in all states. Some advances have, I think, been made in the state of New York. It occurred to me that this condition allies itself to that of children, because until the children's courts were established, the state treated juvenile offenders as it treated delinquents and criminals. Just in such a manner the state now treats cases like that described. That is to say, the law is that if a man commits crime while insane, he is irresponsible, and if he is responsible at the time of his trial, there is no law which compels his confinement. The inquiry is two-fold: first, as to his state at the time the act was committed, and his present condition. When the trial comes on he is placed upon trial before a separate jury for insanity. If found insane, he is then placed upon trial for the crime. This applies to the case Dr. Hoisholt has described. If he had not pleaded guilty, it would have been the duty of the court to set him free. He was insane when he murdered his mother, and had committed the act while irresponsible and insane. That was the only thing for which he could be tried. At the time of the trial he was found to be insane and was acquitted, and therefore must go back into the community to do perhaps the act over again. It only shows the necessity of a special interest taking part in the legislature. We hear a great deal about "special interests" doing so, and undoubtedly they do; but those special interests which are most closely wrapped up with the life of the community take very little cognizance of laws which are being passed by legislatures. The special interest to which I refer is that of the medical profession. The legislature is made up of lawyers, farmers, newspaper men, etc., and very rarely by physicians. I think an organized effort should be made by physicians to have remedial legislation enacted. I had no idea that patients sent to Stockton under the new law were confined with the insane, and I should have hesitated a long while before sending a patient of that character to be confined with insane patients.

A member of your Society told me as I came into the room to-night, that I might speak on any subject, and with your pardon I will do so. It seems to me, from my experience in the Juvenile Court, that there can be but few subjects more important to medical men than the treatment of alcoholics. I did not realize, until this experience, how much of the misfortunes and delinquencies of children are due to the intoxication of parents. From the remarks made this evening, I judge that you physicians treat patients who are, in the main, able to pay. The children who come before us are mainly the children of the poor. They come as infants, sometimes born in the detention wards; and all ages, up to 18 or 19. I think it is safe to assert that 75% are there because of the alcoholic tendencies of their parents. It is a pitiable thing to see beautiful children (and I do not exaggerate when I use the word beautiful); gentle, full of spirit, life, and energy; and clean looking children are often brought there because their parents are habitually intoxicated. It is happening every day, and has for the last ten years, so that it is hard to pick out instances. The instances sort of mass themselves and only leave a general idea of general effect. I recall one little girl of four, nicely dressed in a little white frock, a blue ribbon on her shortly bobbed hair, who came up the aisle of the court holding an officer by the hand. As she came within a few feet—the place was crowded—she looked up and said with a smile on her face, "My mother was drunk last night." Her mother and herself had been found the night before, which was rainy and very wet, the mother with her arm around a lamp-post in a state of absolute intoxication. She could not be taken to jail and had to be taken to the Emergency Hospital. We find in these cases that the threat of actually taking the children for a time produces a state of sobriety, but we also find that in the course of weeks, months, or years, there is generally a recurrence of the trouble. There is no place in California, except insane asylums, where such cases can be treated. This trouble is more remarkable in a woman because of her being a mother. We look to her as being the responsible head of the family and protector of the children—a mother seems so important to me. I hope you will pardon this digression, gentlemen, which I make because it seems important to me. I would urge upon this body to seriously organize a committee to educate the public and the legislature to the end that more scientific treatment be given to inebriates. Eliminate inebriation and you eliminate three-fourths of the troubles affecting children. Not until you go into the courts and these wretched homes, just as you put your fingers into a wound and smell the stench which comes from a sick patient, do you realize the condition of the patient or community—not until then do you realize how much they need your help. We can do practically nothing for them; it depends upon you medical men. For the ten years the court has been established, the doctors of this city have treated gratuitously the children's eyes, ears and throats, and have given them general medical attention; but it needs something more than all the individual physicians can give to aid these people.

It seems that the whole difficulty lies in the fact that if a man has committed an act in a state of mental irresponsibility he must be acquitted, and that is on the statute books because no one has taken the interest to change it. It would be removed without the slightest trouble if those who know so much about the subject would educate the people upon it.

1. Psychiatrie—Leipzig, 1908, page 471.
2. Handbuch der gerichtlichen Psychiatrie, Berlin, 1901.

CHRONIC INTESTINAL STASIS.*

By JAMES EAVES, M. B., Ch. B., Edin., San Francisco.

In choosing this subject I thought it might be of interest to this society to hear a discussion of this pioneer work so ably begun by Mr. Lane. Having been assistant to Mr. Arbuthnot Lane at Guy's Hospital, London, and having carefully studied these cases previous to operation, at operation and watched their subsequent recovery, I felt that these personal observations would be the basis of my paper and to facts and not fancies I will confine myself. On account of the

*Read before the Surgical Section of the San Francisco County Medical Society, May 21st, 1912.

limited time at my disposal, it would be impossible to enter in the details as regards the various theoretical questions which may very properly be raised, and as to which there is as yet very far from being any unanimity of opinion. What I want to bring before your consideration to-night is the result following the operation of short-circuiting on certain types of constipation. These are facts, and not theories. Any theories have got to fit themselves to these facts. I therefore propose to give you as far as I can a picture of the condition of these patients before and after operation. The extraordinary change which it produces is of course first and foremost of immense practical importance, but it has also a wider significance. Here we have what appears to me to be an experimental proof of the existence of chronic intestinal auto-intoxication, a condition whose very existence is now doubted by many. Ten or fifteen years ago many states of ill-health were ascribed to auto-intoxication, some of which have since been shown to have other origins, but it seems to me that now-a-days one is apt to overlook the possibility of this condition as a primary cause of ill-health, in searching for some cause more remote; so that there is a real danger of cases which might be relieved being left unaided, because the physician regards them as, for instance, congenital asthenics, or psychopathics, people doomed before their very birth to suffering which no art can relieve. Mr. Lane first described this condition under chronic intestinal stasis in a paper written in 1901.

I have not an exact number of the cases I came in personal contact with, but I should think nine operative cases and ten subsequent to operation. Constipation is evident, even to the laity, of a defective drainage, and is capable of producing very grave harm. Operative treatment in these cases was not suggested because of the "constipation," but for constipation accompanied by a variety of signs and symptoms which taken together composed a fairly constant clinical picture. Furthermore, in all the cases I came in contact with, exhaustive therapeutic treatment for its relief had carefully been carried out by us. All cases had histories of enemata; the word being a night-mare to some; purgatives, massage, etc., being long and varied. Some had even resorted to surgical interference, appendicectomy, ventral fixation, etc., but in spite of all, they had become chronic invalids and their lives a burden. A majority had been constipated since childhood, but there were many who had a definite history of time of onset. In these latter cases there seemed to be various circumstances that might have been an exciting cause of the condition, and this I think a point of some importance in that it seems to show that it is not so much the cause as the degree and severity of the toxic symptoms produced which are of importance in deciding in which cases this operation is necessary.

One of the most characteristic signs these patients displayed was mental apathy. All complained of abdominal pain. This was of a most varied character: feeling of distension, constant dull ache, or in some acute attacks of varying frequency and intensity sometimes relieved by the assumption of the horizontal posture. In one case, the patient crawled upon the floor during these attacks. Purgatives in some, by the passage of flatus or bowel movement, relieved the attack, but in others was a causal factor of aggravation. Headaches present in all. They awoke with it and a feeling of not having rested. Generally, headaches were of a severe nature. Appetite: in all cases these patients evinced no desire for food, most of them hated the mention of the word. Nausea and vomiting were present in about four of the cases I came in contact with. Weight: loss of weight varied, but to a degree was constant in all. Constipation: marked delay in evacuations, varying from 92 hours to two weeks. All depended upon therapeutic measures. Bismuth meal showed conclusively the delay in the colon. Furthermore, there was some particular part of the large intestine in which it was most marked, in some at the cecum, others at the hepatic flexure, one case the splenic flexure, others at the sigmoid.

GENERAL APPEARANCE:

Skin dry.

Hands cold and clammy, with moist palmar aspects.

Skin staining. Pigmentation varied according to the color of hair, being especially marked in the dark haired. The complexion was sallow with general staining, especially localized under the eyes and on opposed surfaces, such as axillae and groin. Often patients themselves would complain of this loss of complexion. In fair haired people this pigmentation, of course, was not so evident, or was absent.

Breasts. Contained a nodule or nodules first noticed in the upper and outer quadrant, the significance of which must be carefully considered, for have we here, as Mr. Lane suggests, this so-called chronic mastitis becoming cystic, and then possibly later carcinomatous? I listened with interest soon after my arrival in San Francisco, to a paper by Dr. W. S. Thorne, and wondered if some of his cases that puzzled him with their disappearance perhaps did not fall in this category.

Abdomen. Abdominal wall showed loss of tone, usually distended. Tenderness was present at those parts of the colon where X-ray examination had shown the delay to be most marked. In only one of the cases I saw was there a general visceroptosis.

OPERATIVE PROCEDURE AND FINDINGS.

Half an hour previous to operation, 4 pints of sterilized normal saline solution were injected subcutaneously into the axillæ and hypodermic of morphin and atropin. Anesthetic used was open, either with saline solution continued during the operation, generally up to 4 pints. A good incision is made in the median line. Viscera are

then examined. The transverse colon was found usually below the level of the umbilicus. This was packed by sterile cloths into the upper part of the abdomen.

The cecum was generally found to be flabby and voluminous, with loss of tone, generally fixed by adhesions to the right iliac fossa but lying partly within the true pelvis. An ileal kink preventing the withdrawal of the cecum was often found, producing obstruction by the bending of the lower end of the ileum over the pelvic brim as it passes upwards to the cecum, having become fixed by adhesions to the posterior abdominal wall. The place of election for the anastomosis is the rectum, care being taken that the part chosen is below the last point of obstruction. The rectum was found to be dilated and elongated. This facilitated the anastomosis. This elongation is due to the constant accumulation of fecal material, and the lengthening itself becomes a primary cause of obstruction, as in the act of defecation the ileo-pelvic colon and rectum are no longer in a direct axis so that the contents cannot easily be evacuated and in consequence fecal matter collects and a vicious circle is set up.

A selected portion of ileum is then held up and crushed along its length by a pair of strong forceps, and then secured over this point by a strong ligature. A pair of strong clasp forceps are then securely placed across ileum about half an inch on proximal side of ligature, and bowel divided by Paquelin's cautery between ligature and forceps. The part secured by the forceps is packed carefully by sterile cloths whilst the distal end is invaginated by a purse-string suture and made quite firm. An "end to side" anastomosis is then made and carefully packed with silk wrung out in sterilized vaseline.

Formerly lateral anastomoses were made, but this was found to be a source of error, the patients in some cases returning with intense colic and constipation a few months following the primary operation. This was due to the dilatations of the blind ends of anastomosis in which fecal matter accumulated by regurgitation.

Having completed the anastomosis, a full sized esophageal tube is passed up the anus through the junction and beyond for about 3 feet, and fixed in position by a stitch in the perineum. This is usually found to be a very difficult procedure. The object is to drain off the intestinal contents above the junction and to allow the passage of flatus. This is left in position for about 5 days. Abdominal wound is closed by layers of catgut and skin brought together by Michelin clips. Large hot fomentations, frequently changed, are applied to the abdomen, and as soon as possible the patient is placed in the sitting posture. Shock is usually very slight.

Operative findings proved the delay to be greatly due to the mechanical obstruction caused by the development of adhesions which fasten the bowel to the posterior abdominal wall, with the result that it becomes kinked on itself at an acute angle and often in addition rotated in its longitudinal axis so that the anti-mesenteric border is drawn down to the posterior abdominal wall and a definite condition of partial obstruction produced.

SUBSEQUENT TO OPERATION.

My first impression of these cases I may say astonished me; having arrived from across the border, I did not feel in a position to take for granted all that might be told me. Previous to operation these patients had been dull, lethargic, with such marked mental apathy that an attempt at conversation soon proved the poor outlook upon life these patients possessed, but after operation the contrast was so marked you could not believe you were dealing with the same patient. They had become cheery and evidenced such interest in things about them that you wondered if these were patients who had been classed as neurasthenics, hypochondriacs, etc. The first sign of returning health was evidenced by the disappearance of the pigmentation. I was fortunate enough to see many cases that had been operated at least twelve months or more previously, and I must admit the results were astounding. One I especially call to mind of a bartender who had displayed the most extreme type of chronic intestinal stasis. When I saw him one year after operation he was a healthy pink complexioned man, well nourished, had increased in weight, and for the first time was taking a keen interest in life and active sport, distinguishing himself very creditably in the latter. In none of these cases was diarrhea or thirst present. The cystic degeneration of the breast had slowly but surely disappeared. Pain had quite gone in most. Few complained of flatulent distension, but this was easily controlled by paraffin or small doses of oleum ricini. Two cases had marked pain nine and twelve months after operation, which was found to be due to the lateral anastomosis already referred to. In only one case did I think the result not at all satisfactory; this was an individual showing hysterical stigmata.

I have now given you a description of the condition of these patients and of the results which follow the operation. These results are beyond all question, and are such that one is forced to conclude that in these cases the delay of fecal material in the large intestine was responsible for their condition.

Yet I should not like to conclude without laying emphasis on one other point, and that is the rarity of such cases. This is a point which has not, I think, been made sufficiently clear by the advocates of this method of treatment. It is to be remembered that Mr. Lane draws his material from what is probably the largest outpatient service in the world, and furthermore, doctors in all parts of the country send him cases. Yet he has not done a very great number of these operations. Very many of the cases sent to him are rejected. No case of simple constipation is operated upon. It is not

the constipation but the general toxic condition which decides operation. Nevertheless, this does not retract from the theoretical importance of the condition. Here we have in these patients plain and unmistakable experimental evidence of auto-intoxication, and what may occur to such an advanced degree in them, no doubt is present in a large number of cases to a lesser degree.

SOCIETY REPORTS

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of August, 1912, the following meetings were held by the San Francisco County Medical Society:

Section on Medicine, Aug. 6, 1912.

The program was furnished through the courtesy of the Alameda County Society.

1. Exhibition of Case of Actinomycosis. Dr. S. H. Buteau.

2. Specimen of Sarcoma of Superior Mediastinum. Dr. F. H. Bowles.

3. Exhibition of Case of Still's Disease. Dr. Dudley Smith.

4. Fracture-Sprains. Illustrated by X-Ray plates. Dr. Alvin Powell. Discussed by Drs. S. J. Hunkin and Alvin Powell.

5. Transfusion. Dr. N. H. Chamberlain. Discussed by Dr. W. I. Terry. (To be published in California State Journal.)

6. Certain Post-Operative Complications in Appendicitis. Dr. J. L. Lohse. (To be published in California State Journal.)

7. Gastroenterostomy in Apparent Malignant Disease of the Stomach. Dr. M. L. Emerson.

Regular Meeting, August 13, 1912.

1. The Principles of Treatment of the Acute Edemas. Dr. Martin Fischer. Discussed by Drs. Sherman, Wagner, Welty, Ebright, Thomas, Ball, Kerr and Fischer.

Section on Surgery, Aug. 20, 1912.

1. The following cases were demonstrated by Dr. C. G. Levison:

Plastic of Hand.

Exostosis of Os Calcis.

Two Cases of Chronic Bowel Obstruction (X-ray Plates).

2. A Case of Complete Transposition of the Viscera. Dr. F. M. Birtch. (To be published in California State Journal.)

3. Fractures Near to and Into Joints. Dr. Harry M. Sherman.

Part I. Fractures near to Joints. Discussed by Drs. Kenyon, Hunkin, Levison, Macdonald, Fisher and Russ.

Section on Eye, Ear, Nose and Throat, Aug. 27, 1912.

Much interest attached to this meeting owing to the presence of the well-known laryngologist, Dr. Robert Levy of Denver. In his remarks before the Section, Dr. Levy laid great stress upon the importance of the Eye, Ear, Nose and Throat men of the Pacific Coast co-operating for the success of the meeting of the A. M. A. in San Francisco in 1915.

1. Demonstration of Cases:

Heath's Operation.

Modification of Ritter's Operation.

Dr. Henry Horn.

Discussed by Drs. Robert Levy, K. Pischel, C. Welty and H. Horn.

Atresia of Palate. Dr. P. DeObarrio. Discussed by Drs. Welty, Wagner and DeObarrio.

2. A Simple Method of Removing the Epiglottis in Cases of Laryngeal Tuberculosis; Removal of Laryngeal Tumors; Incision of Cysts; Case of Malignant Growth of Larynx. Dr. Robert Levy. Discussed by Drs. Wagner, Welty, Wardell, Horn and Levy.

ORANGE COUNTY.

"The Orange County Medical Association" at a regular meeting held on July 2, 1912, passed the following resolutions:

Resolved: First, that the Board of Censors of this Association be, and are hereby instructed to carefully investigate each and every case of alleged criminal abortion reported to them, as performed or procured in Orange county, either by physicians, druggists, mid-wives, or others, and whenever in their judgment, there are good and sufficient grounds for such procedure, they are authorized to bring the same before the proper legal authorities for prosecution under the laws of the State of California.

Resolved: Second, that this Association, in addition to the authority conferred in the foregoing resolution, pledges its moral and financial support to the Board of Censors, in the discharge of such duties.

The law governing these cases of abortion is as follows:

Sec. 274, Penal Code. Penalty: "Every person who provides, supplies, or administers to any pregnant woman, or procures any such woman to take any medicine, drug or substance, or uses, or employs any instrument, or other means whatever with intent thereby to procure the miscarriage of such woman, unless the same is necessary to preserve her life, is punishable by imprisonment in the state prison not less than two, nor more than five years."

Sec. 275. Submission to Abortion: "Every woman who solicits of any person any medicine, drug or substance whatever and takes the same, or who submits to any operation, or to the use of any means whatever with intent thereby to procure a miscarriage, unless the same is necessary to preserve her life, is punishable by imprisonment in the state prison, not less than one, nor more than five years."

Resolved, That a copy of the resolutions, in reference to the duties of the "Board of Censors" in cases of criminal abortion, together with that of sections No. 274 and 275 of the "Penal Code" of the State of California, be mailed to each and every physician, druggist, midwife, and trained nurse in Orange county, so far as known, and that the secretary be instructed to attend to this duty at his earliest, possible convenience.

Respectfully yours,

JOHN WEHRLY, Secretary.

THE LATE JOHN FIFE, M. D.

It is seldom that the funeral of a physician is such a sad and impressive event that the business of the community stops; it is equally seldom that we find the serious and important lay citizens of a community collecting subscriptions for the purpose of erecting a monument to the memory of a deceased physician. True, few physicians so grow into the hearts and lives of the people about them, so impress themselves upon the entire habit of life of a community, as did John Fife. The name of John Fife stands out prominently in the list of "country doctors" even in a state like California where we have had, and have, so many remarkable men of this class—the ideal "country doctor," the man who always keeps up-to-date, whose work never ends, who is physician, surgeon, specialist, friend, comforter, adviser, companion, who joys in the joy of living and doing; an honorable, upright gentleman.

John Fife was born near Ogden, Utah, in 1860, his parents being on the long road across the plains. As a boy he worked in a drug store at Carson, Nevada, and later went to New York to study. In 1882 he was graduated in medicine from the Medical Department of the University of the City of New York, and in the summer of that year he went to Red Bluff to practice; and there he remained, growing more steadily into the hearts of the people of the community up to the day of his death, May 20th, 1912. It is characteristic of the great modesty of the man that there is not a single photograph of him that can be found, except the one above, which is taken from a snap-shot.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by Fred I. Lackenbach.

Neosalvarsan.

(Ehrlich's Modification of Salvarsan.)

In the course of recent investigations having in view the preparation of readily-soluble and neutral-reacting derivatives of salvarsan, Professor Ehrlich observed that formaldehyde sulphoxylates are capable of retarding for a considerable period the autoxidation of salvarsan solutions.

These observations led to the discovery of a new derivative of salvarsan which is obtained by the action of formaldehyde-sulphoxylate on dioxydiamido-arsenobenzene. This, it is stated, is a condensation product of formaldehyde-sulphoxylate of sodium and salvarsan.

Neosalvarsan is said to contain as the active constituent, dioxydiamido-arsenobenzene-mono-methane sulphinate of sodium ($C_{12}H_{11}O_2As_2N_2$. $CH_2O.SONa$), together with indifferent inorganic salts. It consists of a yellowish powder of a peculiar odor and dissolves very easily in water with completely neutral reaction.

This product is said to possess the following advantages over salvarsan: It dissolves very readily in water, yielding a solution of completely neutral reaction. It is better tolerated and may be administered in larger doses. Its activity is at least as good as that of salvarsan. It is suitable for intramuscular injection.

Neosalvarsan may be administered by intravenous or intramuscular injection. Subcutaneous injections should at all times be avoided because of the danger of infiltrations. The solutions should be prepared with freshly-distilled, sterilized water which for administration should be at the room temperature—not above 20-22° C. (68 to 71.6° F.). The water must be warmed before, and not after, the neosalvarsan is added. A 0.4 per cent. saline solution may also be used for the preparation, provided it is made from chemically pure sodium chloride and freshly distilled water. If freshly distilled water is not available, well-boiled, sterile tap water may be employed if it is practically free from bacteria and does not contain too large a quantity of mineral salts. The solutions must on no account be left standing or kept in stock, as they oxidize even more readily than those of salvarsan. They must be injected immediately after their preparation. Each dose, it is advised, should be freshly prepared for each individual patient.

For intravenous injection 25.0 cc. freshly distilled water is required for each 0.15 gram neosalvarsan. For intramuscular injections, an approximately five per cent. solution is employed—1.0 gram neosalvarsan dissolved in 22.0 cc. water gives an isotonic solution. For each 0.15 gram neosalvarsan consequently, about 3.0 cc. freshly distilled water should be used for the solution. In intramuscular injection, Novocain may be employed as a local anesthetic, 5.0 cc. of a one-half per cent. solution.

Neosalvarsan is marketed in sealed ampoules ranging from Dose No. 1 containing 0.15 gram up to Dose No. 6 containing six times that quantity, 0.9 gram. This latter quantity is equivalent to 0.6 gram salvarsan, corresponding to about three grains arsenic.

The selection of the proper dose, the number of injections to administer, and the intervals between the injections, are dependent upon the stage of the disease, the constitution of the patient, and the age and sex. As a general rule the dose of neosalvarsan corresponds to that of salvarsan.

The most recent advices from Professor Ehrlich give the average dose for a man as 0.6 to 0.75 gram; for a woman 0.45 to 0.6 gram. The maximum dose should not exceed 0.9 gram for a man, and 0.75 gram for a woman. For children the dose is according to age, from 0.15 to 0.3 gram down to 0.05 for infants. The disposition in the employment of these compounds is to use smaller, repeated dosage, and combine the treatment with mercury.

The following are named as contraindications: Serious derangement of the circulation; advanced degeneration of the central nervous system; foetid bronchitis as well as cachexia, if not a direct con-

sequence of syphilis, the remedy is contraindicated, likewise for such patients as exhibit a decided idiosyncrasy against arsenic; in lues cerebralis or meningitis, especially in early meningitis, caution should be exercised in the dosage and the treatment commenced with small doses. No contraindication is afforded by diabetes, nephritis, or tuberculosis, except in advanced cases, nor by pregnancy.

NEWS NOTES FROM NEWSPAPERS.

Turlock is to have a hospital to be built by the Sacred Heart Catholic Church.

Stockton is to have a new $100,000 hospital to take the place of the old St. Joseph's Home.

Poliomyelitis is reported to have attacked the Moqui Indians shortly after the snake dance.

"Social Work" has been the subject of a number of addresses by Dr. Cabot during his visit to California.

In August some 30 cases of poliomyelitis were reported in California in places outside of Los Angeles.

Solano County is to have a new county hospital to be located at Fairfield and to cost approximately $100,000.

Dr. C. P. V. Watson has been sentenced to two years in the State penitentiary for performing an abortion.

San Bernardino has appointed an assistant health officer who is to take charge of a cleaning-up campaign.

San Diego, through its district attorney, is making an active fight against quacks and illegal practitioners.

Hanford is to have two new hospitals; construction work on them has been begun. They are to cost about $40,000.

St. Helena Sanitarium has been sued for $23,000 for burning a patient (hot water bottle?) while under an anesthetic.

Agnew State Hospital has adopted military drill for some of the patients and it is said to be working very successfully.

Santa Barbara County is to have a new hospital, the plans for which have been drawn and accepted. It is to cost about $200,000.

Dr. A. P. O'Brien, a member of the San Francisco Board of Health, was severely injured recently while on a fishing trip.

Knob and Harrison Gulch are having a severe epidemic of typhoid fever. Many people are leaving and going into Trinity County.

Oakland is to provide a nurse for the anti-tuberculosis society and thus relieve the society of that burden and allow it to extend its work.

Dr. E. B. Hoag, formerly of Pasadena and later School Health Officer of Berkeley, has been appointed State Health Officer of Minnesota.

Riverside has taken on new activity in the cleaning-up line and is to force some of its citizens to clean their premises even if they do not want to.

San Francisco will have to close its chemical and bacteriological laboratories for lack of funds. There is money for everything except public health.

Santa Clara County Medical Society entertained Dr. Richard Cabot, of Harvard, on September 18th at dinner, after which he read a paper to the society.

Coalinga is to have a muzzling ordinance rigidly enforced since it has been demonstrated to the citizens there that rabies actually exists in the vicinity.

Chico is the proud possessor of a new "motor cop" and he was unkind enough to arrest some of the local doctors for speeding; he will not be a popular man.

Dr. W. T. Burks of Fresno has been sued for $20,000 for alleged malpractice. Dr. Burks, unfortunately for himself, is not a member of the State Society.

San Jose is considering the adoption of six ordinances which have been prepared by Dr. M. F. Hopkins, dealing with general health measures, flies, dirt, etc.

Typhoid seems to be epidemic in several places and its source has not been definitely determined. In Sacramento it has been giving the authorities much uneasiness.

Dr. A. H. Wright, of San Francisco, has been convicted of murder in the second degree. Mrs. Hattie Brown, a woman on whom he performed an abortion, died.

Alameda County has at last begun to move in the direction of a new county hospital; resolutions have been adopted calling for an architect and expert study of the problem.

Alameda County schools are to have regular medical inspection, if it can be brought about, as the citizens of Oakland have had a chance to see what good results have followed Dr. Foster's work in the schools of that city.

The case of the sculptor Potter, who died in Seattle while under the care of a Chinese "doctor," has attracted much attention and been productive of some excellent editorials in the lay press on the danger of incompetent medical attendance.

Dr. Enoch, who brought suit for slander against a druggist, forgot to put up the necessary bond and was surprised, when the case came into court, to see it thrown out and a bill for $103 handed to him. It must have been quite unpleasant!

Orange County Society has adopted resolutions urging the creation of a society for dealing with Social Disease Prophylaxis, recommending that a health certificate shall be required for marriage and urging sterilization of criminals, mental defectives, etc.

Santa Ana has started a vigorous campaign against dirt and is to clean itself thoroughly. One good thing seems to have come out of the epidemic in the South; many cities and towns are getting cleaner than any one ever dreamt they would or could be.

Speaking of the ordinance relating to poliomyelitis, the Long Beach "Telegram" calls it "that paralyzing ordinance" and says that it has cost the Pike concessionaires at least $100,000. It does not refer to the fact that immediate and effective quarantine saved many lives; certainly not; it is only interested in immediate dollars.

Los Angeles County Medical Association held its first annual banquet on September 3rd. About 250 attended. Speeches were made by Dr. A. S. Lobingier, Dr. F. C. E. Mattison, Dr. F. M. Pottenger, Hon. J. M. Elliott, Hon. Frank Tyrrell and Dr. Philip Mills Jones. It was much in the nature of a boost for the projected building of the Association.

Sonora and vicinity have been having a lot of typhoid and the State Board of Health was asked to look into the matter. It must have been somewhat pleasant to send a report to Sonora calling attention to a report made by Dr. Foster in 1909 in which he pointed out the dangerous nature of the water supply and practically prophesied what has since happened.

The Los Angeles "Tribune," said to be owned by an eddyite, takes the position that the "Chronicle" in San Francisco did in relation to plague. The "Tribune" is cocksure that there is no such thing as poliomyelitis and refers to the epidemic in Los Angeles as "the deliberately fomented scare." Perhaps the world is flat, from the "Tribune's" point of view.

Mr. John Borchard has given $10,000 toward a Sisters' Hospital in Oxnard. They have a site of 10 acres and a temporary hospital accommodating 10 patients. It is expected to erect a hospital costing $30,000 or $40,000, which will be known as the St. John's Hospital, some time during the coming year.

Poliomyelitis in the South continues to be of interest though the acute stage of the epidemic

seems to have passed; the rigid quarantine and the various protective measures that were promptly adopted did the business. It has appeared in a number of the towns in the surrounding country, but only a few cases have occurred. All through the southern section there has been a very general cleaning up process and every one has been on the lookout for the disease.

BOOK REVIEWS

The Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Vol. I, No. 3. June, 1912. W. B. Saunders Co., Philadelphia.

Exhibition at Clinic of Cases Previously Operated Upon (with Comments, Photographs, and Skiagrams); Impacted Colles' Fracture; Fracture of the Olecranon Process; Division of the Brachial Plexus; Tuberculosis of the Intestines—Laparotomy; Cystic Goiter; Double Cervical Rib; Impacted Fracture of the Head of the Tibia with Posterior Luxation; Tumor (Hypernephroma) of the Kidney; Cholelithiasis; Typhoid Spine; Extradural Hemorrhage from Trauma: Excision of Three and One-half Inches of Dura; Pott's Fracture; Five Diagnostic Methods of John B. Murphy.

The Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Volume I, Number 4 (August). Octavo of 154 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Published bi-monthly. Price per year: Paper, $8.00; Cloth, $12.00. W. B. Saunders Company, Philadelphia and London.

Contains: Acute Appendicitis and Pneumonia; Chronic Appendicitis; Ankylosis of the Knee; Arthroplasty; Joint Infections; Angiophlebitis of Leg and Thigh—Old Muscular Hemangioma; Hypertrophy of the Prostate; Nephropyeloplasty; Ankylosis of the Left Elbow-joint—Fracture of Joint with Deformity; Tumor of the Abdomen—Retroperitoneal Sarcoma; Concussion of the Spine with Impacted Fracture of the Vertebrae; Traumatic Epilepsy; Decompression; Transplantation of Bone (Osteitis Fibrosa Cystica); Carcinoma of the Lip; Carcinoma of the Splenic Flexure of the Colon—Intestinal Obstruction; Students' Clinic—Fractures.

A Handbook of Medical Diagnosis. J. C. Wilson, A. M., M. D., Professor of the Practice of Medicine in the Jefferson Medical College, etc. Third edition. J. P. Lippincott Co., Philadelphia and London. 1911. Price $6.00.

This, the third edition of a book already almost to be called standard, needs little comment. Among the rather numerous works in this field it occupies one of the leading places. Together with the others it has both its excellencies and its faults. The chapters on methods of physical diagnosis seem to us particularly valuable, being both clear in description and sane in interpretation. We cannot be so enthusiastic about the portion devoted to laboratory methods when we find the statement that malaria parasites are best found in unstained preparations, and no description is given of their appearance when stained. This view is about ten years out of date. We somewhat doubt the wisdom of combining a laboratory hand-book with a text-book of physical diagnosis, when the former subject is so well and so much more fully covered in special treatises. J. L. W.

The Care of the Skin and Hair. By William Allen Pusey, A. M., M. D. D. Appleton & Co., New York. 1912.

The author presents for the laity a small book containing much useful information concerning the anatomy and physiology of the skin and hair, and some of the common disorders of the same. There is given also practical instruction regarding general hygiene as well as the special care of the skin and hair. Much educating of the public in these matters is necessary in order to prevent their being made victims of the ever friendly barber, the prescribing druggist, the officious "beauty parlor" employee and other quacks who are always ready to give their interested advice. Therefore the book is timely, and it can be well recommended. H. E. A.

Text Book of Gynecology. Gardner. Published by D. Appleton & Co.

The first impression one receives on reviewing this work is that thoroughness has been sacrificed for the sake of brevity; but on careful review, it appears to cover the ground fairly well, in a clear, concise though brief manner. According to the preface, the author intimates that it does not aim to cover the entire subject at length, but is a book intended chiefly for the student who has not the time to devote to an exhaustive study of the subject. As such a text-book it is a valuable aid. One is impressed that the author has had a rather extensive experience in the practical clinical teaching of gynecology, and there are many good points brought to the attention of the reader. The book is well gotten up, the paper being of excellent quality, the type large and clear; and while the illustrations are, for the most part, diagramatic there are many good photomicrographs and some excellent photographs of pathological specimens. While the book will not add greatly to the value of the many more or less extensive text-books of gynecology published, nevertheless, in my opinion, it will prove a valuable aid to the medical student and the young practitioner engaged in general practise. F. P. T.

A Text-Book of Pathology. For Students of Medicine. By J. George Adami, M. A., M. D., LL. D., F. R. S., Professor of Pathology in McGill University, Montreal, and John McCrae, M. D., M. R. C. P. (London), Lecturer in Pathology and Clinical Medicine in McGill University, formerly Professor of Pathology in the University of Vermont. In one octavo volume of 759 pages, with 304 engravings and 11 colored plates. Cloth, $5.00, net. Lea & Febiger, Philadelphia and New York, 1912.

As stated in the preface, the book is not merely an epitome of the authors' large work on "The Principles of Pathology," but complete in itself and properly modified to meet the different requirements. It is natural, however, that in many respects considerable similarity is found in the handling of the subject matter. The illustrations from the earlier book have been very largely reproduced in the new one, but new plates have been added where it seemed desirable. The book contains a tremendous amount of information in a comparatively small space and is therefore rather difficult reading like all other text-books on Pathology known to the reviewer. The remedy for this defect, if it is any, is not very obvious at the present state of our knowledge. The book "inherits" the many admirable properties of its predecessor and can be thoroughly recommended to students.

W. O.

Diseases of the Ear, Nose and Throat. By Henry Ottridge Reik, M. D., assisted by A. J. Neilson Reik, M. D. D. Appleton and Company, New York.

Reik has given us a text-book which is well adapted for the family physician and undergraduate medical student. Beginning with the anatomy and physiology of the ear, the various commoner dis-

eases are taken up seriatim, including labyrinthine inflammation, aural vertigo and labyrinthine apoplexy with the pathology and treatment. A chapter is devoted to general diseases in which aural complications are prone to occur. The upper respiratory tract is treated in a like manner.

The book is well printed and contains numerous illustrations which are very accurate. It can be recommended especially to the undergraduate student. W. S. F.

The Treatment of Fractures. By Charles Locke Scudder, M. D. Seventh edition, thoroughly revised and enlarged. W. B. Saunders Company, Philadelphia, 1911.

The author has added material to the previous editions, chiefly in those chapters dealing with "fractures of the skull; old fractures of the nasal bones; fractures of the spine; excision of the shoulder-joint; damage to the musculo-spiral nerve; fractures of the neck of the femur; old fractures of the lower end of the tibia"; and "injuries to the lower tibial epiphysis." To completely review this new edition would be to repeat the commendations that have followed the advent of all the previous editions. It remains the handy compendium of treatment of injuries to the bones and joints that has been consulted by many of our practitioners since the first edition was put upon the market. S. H.

False Modesty. By E. B. Lowry, M. D., author of Confidences. Truths, Herself, Etc. Forbes & Co., Chicago. 1912.

"The chapters of this book were originally published in a prominent magazine as a sequel to the series that first brought the white slave traffic to the attention of the world in general."

It is a book designed to show parents the need for educating children on matters sexual, the methods to be employed having already been fairly well sketched in the other books by the same author. There is no question that parents will find much food for thought in this series of Dr. Lowry's, and this book is a step in the right direction. R. B.

Musser-Kelly. Practical Treatment. Vol. iii. 1033 pp. W. B. Saunders, Philadelphia.

This volume, like the two preceding, is a system of monographs by such authorities as Janeway, Hewlett, Roswell Park, Anders, Moynihan, Spiller, Dercum, Moffitt and others of similar reputation. It deals with constitutional diseases of the respiratory, digestive, urinary, nervous and muscular systems. The subjects are treated in a delightfully complete and authoritative manner. Sufficiently exhaustive expositions of the clinical aspects of each condition precede the discussion of therapeutic measures. The scope of subjects under each subdivision is complete and covers not only the important and familiar diseases, but the no less interesting rare conditions, the treatment of which has been so often slighted. The experience and painstaking labor of the authors render the volume of excellent value. The scholarly form in which the monographs are written not only sustains the interest of the reader, but imbues him with something of the enthusiasm that is engendered in the atmosphere of a modern hospital. G. E. E.

Recent Methods in the Diagnosis and Treatment of Syphilis. By C. H. Browning and I. McKenzie. Lea & Febiger, Philadelphia, 1912.

The literature upon this subject has been fully covered and brought up to date. The book is beautifully arranged, and one here finds at hand that which would take days of search through journals. Added to this is a great deal of personal research by the authors. This book is one everyone interested in the subjects of the Wassermann reaction and salvarsan treatment should possess. H. R. O.

The Care of the Skin and Hair. By William Allen Pusey, A. M., M. D. D. Appleton and Company, New York and London.

The average woman is constantly on the alert for any information on the subject of cosmetics and the complexion. If authentic guides are lacking she accepts the spurious. Any book dealing rationally with the care of the skin and hair should be welcomed as an offset to the balderdash which is commonly served in Sunday supplements. Dr. Pusey has treated the subject with a scientific mind and a lay pen. The result is an interesting little volume of something less than two hundred pages which presents the necessary facts of structure, function and care of the skin and hair. The relation between general health and the skin is not neglected and the inquiring lady will probably find in the chapters on soaps, powders, creams and ointments just the information for which her soul is longing.

The author regards baldness as a transitional stage in man's evolution and is pessimistic concerning his future chances of hirsute adornment. Whether one accepts this view or not, it need worry none of the book's readers, for ultimate universal baldness must needs be still some few generations in the future. Meanwhile the author has many practical and wholesome ideas concerning the scalp which may be read with advantage by all. E. D. C.

Differential Diagnosis. Second Edition Revised. Presented through an analysis of 385 cases. By Richard C. Cabot, M. D., Assistant Professor of Clinical Medicine, Harvard Medical School. Second Edition. Octavo of 764 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1912. Cloth, $5.50 net.

The comparatively early appearance of a second edition of a new work indicates its acceptability in filling a real want. In the case in point the field invaded was practicaly unoccupied, this volume being one of a series of text-books devised for use in the Harvard Medical School, which has adopted the now widely-used case-system first put in practice by the Harvard Law School. Apart from a discussion of the pedagogic value of such a system in teaching medical subjects, we cannot refrain from commenting warmly on the value of this book as light reading for the general practitioner,—for in spite of its solid value it does make delightful reading. Dr. Cabot's positiveness of assertion, though it necessitates the occasional use of the granum salis, makes him a clear and successful teacher both in the class-room and in print. His destructive criticism, when applied to diagnoses such as biliousness, rheumatism, ptomaine-poisoning, neuritis, gastritis, and many other refuges of the slovenly diagnostician, is certainly refreshing, and comes most appropriately from Boston, which for twenty years or more has been the home of the scientific scepticism which has been so sadly needed in medicine. Without committing oneself to agreement with every one of Cabot's generalizations, or of his particular inferences, the book may be recommended as stimulating and useful. J. L. W.

Text Book of Ophthalmology. In the Form of Clinical Lectures. By Dr. Paul Roemer, Professor of Ophthalmology at Greifswald. Translated by Dr. M. L. Foster, New York. Rebman Co., Vol. 1, 1912.

Although primarily intended for the author's own students these lectures command a wide circle of

readers. Their easy diction and ample discussion, based on their viva voce deliverance, render them of ready access to the medical tyro, whilst their broader pathological outlook, according to the academical teaching of ophthalmology in the German university, will afford the general medical man some insight to the place of the discipline in medicine.

The present volume deals with the affections of Conjunctiva, Iris and Lens. Everywhere the modern social aspect is well taken care of, as, for instance, with regard to gonorrhic and eczematous conjunctivitis, trachoma and ulcus serpens. Whilst in parts details are discussed of more direct interest to the specialist, the reviewer notices under Blennorrhoea of the conjunctiva the omission of the prognostically important role of pneumococcus. On the other hand, it is gratifying to see a whole paragraph devoted to diplobacillus ulcer of the cornea. We well remember how, some years ago, in the discussion on a paper of his on bacteriology of the conjunctiva the reviewer has been criticized along the cui bono-argument. To such critics the perusal of this paragraph would supply the proof of the practical value of a thorough scientific diagnosis. As a literary contribution the "Senile Cataract as a Specific Disease of Metabolism" easily holds first place in the volume. Roemer's "biological" theory regarding the etiology of cataract, as expounded during recent years at the several sessions of the Heidelberg Ophthalmol. Congress appears at the moment even less likely of clinical fruition than it did at its inception. The illustrations compare not favorably with those of other modern German text-books, Axenfeld's e. g.

N.

Diseases of the Genito-Urinary Organs and the Kidney. By Robert Holmes Greene & Barlow Brooks. 3rd edition revised and enlarged. W. B. Saunders Co., Philadelphia and London, 1912. Half Morocco $6.50. Cloth $5.00.

This is an eminently practical book, written for the general practitioner who, therein, will find almost everything of practical value and interest concerning the anatomy, pathology and the modern treatment of lesions of the genito-urinary tract. Particularly conspicuous, in this respect, is the chapter dealing with the general examination of the patient; it abounds in many useful suggestions and gives ample proof of the authors' large personal experience in their special field of work. And wherever the authors, on the basis of their own wide experience, express their opinion upon the relative value of certain operative procedures or other diagnostic and therapeutic measures, the reader may safely be guided by their sane and conservative views.

From a purely urological standpoint, though, the book will not escape severe criticism. The chapter on cystoscopy, etc., is, even for the purposes of the general practitioner, inadequate; he will in vain look for the description of the optical construction of the various types of cystoscopes or of the aspect and most important cystoscopical landmarks of the normal bladder. The stress laid, on the other hand, upon the value of the retrograde (Schlaginweit) modification of the cystoscope seems out of proportion to its real importance. For ureteral catheterization—to quote one more mooted statement—by means of the so-called straight type of cystoscope the authors recommend filling the bladder with from 8 to 12 oz. of fluid, a desideratum to which, if actually required, not many male bladders will readily respond.

The diagnostic value of the X-Rays is dealt with in a few brief sentences, entirely out of proportion with its generally recognized importance for the diagnosis of urological lesions.

The description and critical review of the various tests, showing permeability of the kidneys, testify to the experience and good judgment of the authors, who consider the phloridzin test, after many years of observation, to be the most valuable, satisfactory and practical of all tests.

Among the methods of anesthesia Heinrich Braun's method of local anesthesia (for the scrotum, etc.), is not mentioned. The condemnation of spinal anesthesia, on account of one accident in the authors' practice, does not appear justifiable.

While the chapter on the anatomy and physiology of the kidneys could be omitted without detracting from the book much of its material value, the chapter on the blood and blood-pressure in diseases of the kidney represents an unique and most valuable addition to the practical scope of the volume. It is to be hoped that the authors' views on the etiology and treatment of renal tuberculosis will, in the future, be materially revised in accordance with the authoritative communications of the last urological congress.

Due credit is given our late Dr. Chismore for his valuable modifications and improvements of the lithotrite and, in this connection, a manuscript on litholopaxy written by Drs. Chismore and McCormick (McConnell?) is mentioned, which, we trust, will soon appear in print. Such and similar errors, as that in the name of our genial confrere E. G. McConnell, not infrequently met with in the book, are not only confined to American authors (Jaddeson instead of Jadassohn, etc., etc.). More distressing, though, are the many incorrect quotations of Latin terms (locus minora vesistentia!! tubuli afferenti! etc.).

Notwithstanding these shortcomings Greene and Brooks' book contains many excellent features; its language is precise and clear; it deals, as was pointed out above, with all important urological questions, from the standpoint of the authors' own ripe experience, and the book will be in the future, as it was in the past, a valuable addition to the library of the general practitioner. M. K.

The Physiology of Faith and Fear, or the Mind in Health and Disease. By William S. Sadler, M. D. Chicago, Ill., A. C. McClurg & Co., 1912. 8vo. illustrated, pp. xxll, 580.

In this volume, one of Sadler's series of medical books "designed for laymen," the author approaches the subject of psychotherapy from the scientific standpoint of a physician, in contrast to the attitude of unqualified authors on mental healing and moral therapeutics whose motives are not quite above reproach. Faith and Fear, in the title of this book, stand for Optimism and Pessimism. Faith represents the normal, the healthy, the natural state of man, while Fear stands for the opposite condition—the abnormal, the unhealthy, the unnatural moral and mental attitude.

This book is chiefly treated from a physiological basis, but a considerable part, about one-fifth, is devoted to the fundamental principles of psychology. The work consists of three parts, each of which is divided into many chapters. Part one, the psychological section, is particularly well written. Part two deals with the physiological aspect, while the third, the largest part, is the therapeutic section. Sadler goes in this third part into the details of the principles of modern psychotherapy. He mentions complex formations, the influence of dreams on consciousness, mental diagnosis, psychoanalysis, etc. In other words he discusses the most modern aspect of mental treatment. He opposes hypnotism for therapeutic purposes, contrary to the experience of the majority of psychotherapeutists, and is a follower of the "direct and honest conversational method, first recommended by Dubois"—which, in passing, was first recommended by Morton Prince.

The book contains a number of good diagrams, of which Nos. 10 and 12, illustrating the phases

of consciousness, are particularly instructive. The entire volume proves the author's faculty to render scientific problems palatable, interesting and comprehensible to the educated non-medical reader. Healthy educated laymen will read it with profit, especially those who in their business or profession come in contact with others, such a judges, lawyers, teachers, officers in the army and navy, etc.

It is a question whether psychoneurotics should be instructed in medical matters by books. It is true that these patients form a large part of the clientele of a physician, it is true that the majority of physicians at present are not sufficiently conversant with psychology and psychotherapy to do justice to this class of patients. It is also true that few physicians outside of the specialists have the time necessary to the treatment of these patients. The attitude of the medical profession is responsible for the spread of unscientific or semi-scientific cults and methods of healing. The way to prevent the transference of so many patients into the camps of faith-curists lies in educating the medical profession in psychotherapy, and not in recommending to the patients books for instruction which, in a few instances, may perhaps have a good influence, but will in the majority of cases through the power of suggestion, be a cause of introspection and self-contemplation.

In psychotherapy the secret of success lies in proper individualization. The medical advice and the procedure of treatment have to be given in accordance with the individual symptoms and vary not only with the different psychoneurotics but also during the treatment of the individual. It is evident that no book, however well written, however perfect it may be, can not only never take the place of the trained physician, but will handicap the medical adviser and may aggravate the condition of the patient.

The book is recommended to all physicians who have a desire to inform themselves on psychotherapy without having the time to devote special study to this indispensable adjuvant of our medical equipment. C. R.

PACIFIC ASSOCIATION OF RAILWAY SURGEONS; TENTH ANNUAL MEETING.

Under the presiding gavel of Dr. O. D. Hamlin, President, and the guiding hand of Dr. G. R. Carson, Secretary, the Association met August 30 and 31, at the St. Francis Hotel, San Francisco. Some sixteen papers were read during the two afternoons, and were discussed at length. On Saturday the annual lunch was the first attraction on the program and was enjoyed by a large number of members and a few guests.

The officers elected for the next year are as follows: President, Dr. David Powell, Marysville; First Vice-President, Dr. Legge, McCloud; Second Vice-President, Dr. S. J. Gardner, San Francisco; Treasurer, Dr. E. M. Keyes, Alameda; Secretary, Dr. G. R. Carson, San Francisco.

The next annual meeting will be held in San Francisco.

GERMAN PROPRIETARIES AND PATRIOTISM.

The innocent-looking articles with a nostrum testimonial at the end which were at one time tolerated or encouraged by most American medical journals have become a thing of the past. But in Germany the practice still flourishes, in fact it sometimes looks as if the writers, out of sheer good nature and as an after-thought, had tucked away a few nostrum boosts at the end of their otherwise valuable contributions.

Now, however, the Journal A. M. A. (Aug. 10, 1912, p. 452) tells that it is not good nature but patriotism which makes nostrum promoters out of some of our German colleagues. Recently the German Congress for Internal Medicine has appointed what may be called a German Council on Pharmacy and Chemistry which is to be known as "Die Arzneimittelkommission des Congresses für innere Medizin." A preliminary report of this commission has appeared and as might have been expected is being opposed by pharmaceutical manufacturers. Regarding this protest of German manufacturers the Journal says: "The nature of the protest is a general objection to any interference with trade. One phase of this protest, however, is especially characteristic of Germany's tendency; it is charged that this report is liable unfavorably to affect the sale of German proprietaries in foreign countries. To those German physicians who feel that patriotism demands the support and advancement of all German industry, regardless of its character, we would say that the time has long passed when we in this country took as gospel truth the claims made in German advertising circulars and in the many articles exploiting proprietaries which come to us in the form of reprints from German medical journals."

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Nonofficial Remedies, 1912, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies."

Articles accepted for N. N. R. Appendix:

Syrup of Quinine with Chocolate containing quinine sulphate 2.156 gm. in 100 cc. (10 grs. in a fluid ounce).

Ointment of Cargentos and Ichthyol containing cargentos 5 per cent. and ichthyol 5 per cent. (Jour. A. M. A., Aug. 3, 1912, p. 369).

Since publication of New and Nonofficial Remedies, 1912, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies."

Purified Extract of Adrenal Gland, Mulford, is an extract of the suprarenal gland, standardized physiologically by measuring its effect on blood-pressure and so adjusted as to correspond to the effect of 4 per cent. of purified epinephrine. It has therefore approximately four times the strength of desiccated suprarenal gland U. S. P. It is marketed as follows: Adrenal Ointment, Mulford, containing purified extract of adrenal gland, Mulford 25 parts, boric acid 1 part in 1000 parts. Urethral Suppositories Adrenal Comp., Mulford, each containing purified extract of adrenal gland 0.06 Gm. (1 grain), cargentos 0.13 Gm. (2 grains). Vaginal Suppositories Adrenal Comp., Mulford each containing purified extract of adrenal gland 0.06 Gm. (1 grain), cargentos 0.13 Gm. (2 grains), ichthyol 0.13 Gm. (2 grains). H. K. Mulford Co., Philadelphia (Jour. A. M. A., July 13, 1912, p. 121).

Articles accepted for N. N. R. Appendix:

Lozenges Adrenal Comp. each containing dried suprarenal gland 0.01 Gm. (1-6 grain), menthol 0.0013 Gm. (1-50 grain), benzoic acid 0.0026 Gm. (1-24 grain), eucalyptol 0.0013 Gm. (1-50 grain).

Rectal Suppositories Adrenal each containing dried suprarenal gland 0.3 Gm. (5 grains) (Jour. A. M. A., July 13, 1912, p. 121).

USE OF TYPHOID VACCINES.

To the Readers of the California State Journal of Medicine:

About six years ago the writer began to use vaccines in the treatment of typhoid fever. Since that

time he has thus treated more than one hundred cases and has obtained numerous articles upon the same subject written by physicians in various parts of the world. It seems possible, however, that some may have escaped notice. He also realizes that many of the profession may have treated some cases without reporting them. A paper upon the subject is now in the course of preparation. In this it is earnestly desired to incorporate reports from a large number of cases, good, bad and otherwise. He accordingly makes the following request to the readers of this Journal:

Will any one who has used vaccines in the treatment of typhoid fever, whether but one case or more, kindly communicate to him that fact, accompanied by name and address of the reporter? If the results have already been reported, a note of the Journal in which they appear will be sufficient. If they have not been reported, a short blank form will be sent to the physician to be filled out. Due credit will be given in the article to each person making a report. If any physician happens to know of other confreres who have any such cases, it will be appreciated if he sends their names, as they may not happen to read this note. It is hoped that by this means a sufficient number of cases may be collected to somewhat definitely settle the now mooted question whether vaccines are or are not of benefit in typhoid therapy.

Reports of cases will be accepted at any time in the future, but preferably by November or December of the present year.

Kindly communicate with Dr. W. H. Watters, Director of the Department of Pathology and Bacteriology, Evans Institute for Clinical Research, Boston, Mass.

PUBLIC HEALTH SERVICE.

The long desired change has come and by an act of Congress approved August 14th, the name of the old Public Health and Marine Hospital Service is abolished and a new and proper name given: the United States Public Health Service. The powers and duties of the Service are increased and broadened (though not as much as they should have been) and there is an increase in pay—though that, too, is not so great as it should be. It will be pleasant news when both duties and pay are again increased, as they certainly will have to be, some day.

RELATING TO HEALTH SUPERVISION OF SCHOOL CHILDREN.

The State Board of Health and the Department of Public Instruction of Minnesota wish to lend their aid to the schools of the state in promoting health supervision of school children. To this end, the State Board of Health has engaged the services of Dr. Ernest B. Hoag, formerly of the University of California, to help Minnesota towns and cities to organize health work in schools.

Dr. Hoag will travel about the state, spending from one day to two weeks, as may be required, in the various places needing his services.

It is proposed to demonstrate to towns, cities and counties that rational conservation of the mental and physical health of our school children is possible and practical with the means already at hand. Three plans will be proposed:

1. Organization with a medical officer and nurse or nurses.

2. Organization with school nurse or nurses only.

3. Organization by the employment of a simple non-medical health survey on the part of the teachers only. Such a survey is provided by a series of questions based upon ordinary observation of physical and mental conditions. The outline for this purpose will be furnished by the State Board of Health—one for each child. No community need wait for the employment of a medical officer in order to begin sensible health observation of school children.

Dr. Hoag will be available for lectures on Child Hygiene, Medical Supervision, and related topics, for clubs, institutes, and various other organizations. The State Board of Health will maintain in its office in the capitol building, St. Paul, a clearing house of information concerning child hygiene, medical supervision, the teaching of school hygiene, sex hygiene, and the like. Please make full use of the opportunities furnished in this new work. Your co-operation is earnestly desired.

For further information address Dr. H. M. Bracken, Secretary State Board of Health, St. Paul, or Mr. C. G. Schulz, Superintendent of Public Instruction, St. Paul.

REFLECTIONS OF A PLAIN BUSINESS MAN.

This morning's mail is on my desk and it interests me as a business man and a tax-payer. First, I find a receipt for the last installment of my state and county taxes; a certain part of this goes, I am sure, to the support of the Government; proper, of course; we must have the support of the ordinary tax-payer to keep up the machinery of the whole.

Another item in the mail is a bill for gasoline furnished last month for my machine. Now I regret to say that my auto has become a business necessity, it is no longer a luxury. Business time and tide wait for no man, and the hurrying wave of business has forced me to use an auto; the good old horse will no longer accomplish my purpose, therefore he has been sold and his "proceeds" and a good deal more purchased the machine.

The price of living for the Government seems to be going up, too, as I find the tax receipt a little larger each year in spite of the fine-sounding promises of our honest politicians. Also I notice the price of gasoline has gone up 5 cents a gallon compared with last month's price, due, I suppose, to the earnest desire of our friend John D. to endow some institution a little harder than he did before; but I pay whether I feel "endowable" or not; it's a case of J. D. getting the credit for my unwilling nickel.

The next item of interest in my mail comes legally without a stamp, but with a Government frank; it is a long religious article gotten up in the United States Senate by Senator Works of California. I read it and discover that Senator Works is very much afraid that the Government will put a barb-wire fence around somebody's "medical freedom" and that they would not be allowed to live and die by any route, medical or religious, that they chose. Now I have had an idea, which must be erroneous, that one of the fundamental principles of the constitution of these United States was that anybody and everybody should serve God as he pleased; I had an idea that this was the "big" reason why people sailed over the ocean several hundred years ago and from that time religious belief has been safe-guarded by the constitution, and as for medical freedom, it looks mighty free to me when he can take his choice of "Christian Science," Osteopathy, Mental Healing, New Thought, Chinese Bugs, Clairvoyance, Divine Healing, or none at all.

As I read further, I find the Senator afraid of a Public Health Bureau, because it might be run by trained experts in public hygiene. If anything goes wrong with our forests, trained experts are sent to investigate the trouble and eradicate it, the same with sick orchards. If hog cholera breaks out, do you, Mr. Senator, think it wrong or interfering

with anybody's liberty to send experts to put a speedy stop to it, and as quickly as quarantine and other effective measures will do it? But when it comes to the children and the poor of our country, "hands off," or somebody's religious or medical liberty will be shackled! Isn't the Senator willing that the people of this great country should have the same expert care that the trees and cattle have? Trees and cattle belong to his God, too, but they also die of disease and pestilence.

Would it not look ridiculous in the face of our great religious liberty for some Senator who was an ardent Catholic, Methodist, Presbyterian, Theosophist or non-believer to take hours of the time of the Senate of the United States elaborating his religious belief? Would the Senate tolerate it? Would any other Senator try it unless he wished to be laughed at? It would be interesting to know what an hour's talk on a necessary subject costs the taxpayers of this country. With the well-paid Senators listening to a religious tirade hours long it must be a very expensive luxury and for a business man and taxpayer to read the Congressional record of unnecessary noise it is to laugh and "cuss."

But back of all this I am interested as a taxpayer in the conservation of the public health because it is money in my pocket not to have epidemics or plagues or quarantined states; therefore aside from anybody's religious belief I want a Bureau of Public Health for economic reasons if for no other, and Jno. D. Works can put his wife at the head of it for aught I care if she will serve faithfully and conserve the public weal. He seems to feel quite sure that some certain sect in medical practice will be at the head of such a bureau. I am not afraid of that and think his fear an error, for if that head, whoever he may be, is not effective, we, the plain people and taxpayers, will see that some good executive gets the job. A non-effective head of a Public Health Bureau would soon be let out by the clamor of public sentiment.

Now, Mr. Senator, why has the price of gasoline gone up? Maybe you are not on the right committee to answer that, but as a public servant, as the servant of every taxpayer I ask you what are you doing to make good laws and taxes less? Don't talk maudlin sentiment by the hour; talk to my pocketbook; that's what you are there for. Somewhere in the good book it says "Faith without works is dead;" we don't pay you a salary to exploit religious beliefs or revive dead beliefs of Aristotle or Pliny or anybody else; if you want to do that hire a church; we want results and if you don't want to give them to us for your present salary, come home and let the other fellow try it; you are paid by the common people to serve our interests.

Any political economist will tell you disease and sickness cost the state an unnecessary sum every year; unnecessary because preventible. This would be the function of a Public Health Bureau. If you do not recognize disease and prevention, then give some one a chance who does.

What is your objection, religious or medical, either one is immaterial and altogether personal with you, hence of no interest to a taxpaying public? We respectfully ask you to support a bill for the establishment of a Public Health Bureau, believing it for the best interests of taxpayers generally, who have given the matter any thought.

Church and state never have gone well in double harness. We ask you to divorce your personal religious views from your statesmanship in the interests of your constituents.

And now, Mr. Works, why are you fighting a plan for the protection of public health which means life and health saved to the state and nation? Play ball, Mr. Works, do something for the good of your constituents as a majority of them see it or get out of the game. This from

A TAXPAYER.

ENCOURAGING APPROVAL.

I wonder that it has never occurred to some of the money-mad people in this town that they really owe a world of gratitude to Health Commissioner Powers and his assistants. Now, that the scourge of infantile paralysis appears on the wane, many are rushing in to say that the scare was unfounded, never thinking that the passing of the disease may be due only to the efforts of the health department. Cannot these short-sighted persons see that people from other localities, where the fighting of quarantine is never dreamed of, will come more quickly when they see proper efforts being made to control disease? Could these misguided persons realize for a moment how their actions are regarded by people in other localities, they would be moved through principles of policy which alone seem to move them, to encourage and assist, rather than malign and retard the health officers.

Now that certain persons among us have advertised to the world that Los Angeles invites people only for their money, to seek to do away with sanitary measures which would protect their children, will not these persons indorse the taking-down from the churches the Bible and Crucifix and putting up the dollar sign, erasing the stars and stripes from the flags and imprint a likeness of a twenty-dollar gold note? The demons of hell respect little children; they allow them to remain sinless while children. But some in this city, which aspire to the height of glory in our civilization, rather than risk the loss of a few dollars, would risk seeing little children suffer and die or remain paralyzed throughout life.

If anyone in this city thinks that fighting the control of infantile paralysis and rabies is going to advertise Los Angeles favorably to the world, they would better begin, with the little children they sin against, and learn the lessons of life over.—C. R. Naff, in Los Angeles Times.

NEW MEMBERS.

Smith, Flora W., Kingsbury, Cal.
Smith, T. D., Kingsbury, Cal.
Savage, W. W., Fresno, Cal.
Yates, W. C., Coalinga, Cal.
Mathewson, C., Fresno, Cal.,
Bullard, Chas. T., Hume, Cal.,
Jones, O. W., San Anselmo, Cal.
Owen, Gilbert R., San Bernardino, Cal.
Reily, Jno. A., Patton, Cal.,
Bly, F. H., Red Bluff, Cal.
Yost, Jno. Dixon, Sacramento, Cal.
Davenport, A. K., San Francisco.
Herrington, E. L., San Francisco.
Legris, I. H., San Francisco.
Boyd, W. T., Riverdale, Cal.
Hare, John D., Reedley, Cal.
Hutchison, C. W., Coalinga, Cal.

RESIGNED.

Adams, Wm. L., Fresno, Cal.
Hanson, G. F., San Francisco.

DEATHS.

Greenleaf, Edw. F., Santa Ana.
Rich, Geo. D., Imperial, Cal. (Died in Petaluma, Cal.)
Mansur, L. C., Santa Ana, Cal.
Thiele, Emil, San Francisco.
Coe, Geo. Delos, address unknown.
Weed, Frances T., Los Angeles.
Davison, Wm. Armstrong, Bridgeport (Mono Co.), Cal.
Buckel, C. A., Oakland, Cal.
Alford, B. M., Tulare, Cal. (Died in Alameda.)
Coxhead, T. C., Oakland, Cal.
Chaffee, J. D., Long Beach.

BOARD OF EXAMINERS, AUGUST, 1912, SESSION.

School of Medicine.	Passed.	Date of Graduation.	Percentage.
Coll. of P. & S., Los Angeles, Calif		6, 26, 08	81.9*
Coll. of P. & S., San Francisco, Calif		6, 8, 11	78.5*
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	88.3
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	87.
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	86.
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	85.
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	84.2
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	82.4
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	81.4
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	81.3
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	80.7
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	80.7
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	79.9
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	79.4
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	78.7
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	78.5
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	77.7
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	75.1
Coll. of P. & S., Univ. of So. Calif		6, 13, 12	75.
Cooper Med. Coll., Calif		5, 9, 12	90.3
Cooper Med. Coll., Calif		5, 9, 12	89.7
Cooper Med. Coll., Calif		5, 9, 12	89.
Cooper Med. Coll., Calif		5, 9, 12	88.8
Cooper Med. Coll., Calif		5, 9, 12	87.4
Cooper Med. Coll., Calif		5, 9, 12	86.8
Cooper Med. Coll., Calif		5, 9, 12	86.5
Cooper Med. Coll., Calif		5, 9, 12	86.5
Cooper Med. Coll., Calif		5, 9, 12	85.8
Cooper Med. Coll., Calif		5, 9, 12	85.7
Cooper Med. Coll., Calif		5, 9, 12	84.9
Cooper Med. Coll., Calif		5, 9, 12	84.9
Cooper Med. Coll., Calif		5, 9, 12	84.8
Cooper Med. Coll., Calif		5, 9, 12	84.5
Cooper Med. Coll., Calif		5, 9, 12	84.
Cooper Med. Coll., Calif		5, 9, 12	83.6
Cooper Med. Coll., Calif		5, 9, 12	83.4
Cooper Med. Coll., Calif		5, 9, 12	83.4
Cooper Med. Coll., Calif		5, 9, 12	82.7
Cooper Med. Coll., Calif		5, 9, 12	81.3
Cooper Med. Coll., Calif		5, 9, 12	80.5
Cooper Med. Coll., Calif		5, 9, 12	80.2
Cooper Med. Coll., Calif		5, 9, 12	79.
Cooper Med. Coll., Calif		5, 9, 12	78.2
Cooper Med. Coll., Calif		5, 9, 12	77.9
Cooper Med. Coll., Calif		5, 9, 12	76.1
Hahnemann Med. Coll. of Pac., Calif		4, 25, 12	86.
Hahnemann Med. Coll. of Pac., Calif		4, 25, 12	81.1
Hahnemann Med. Coll. of Pac., Calif		4, 25, 12	81.1
Oakland Coll. Med. & Surg., Calif		5, 28, 12	80.7
Univ. of Calif., Med. Dept., Calif		5, 15, 12	92.3
Univ. of Calif., Med. Dept., Calif		5, 15, 12	89.7
Univ. of Calif., Med. Dept., Calif		5, 15, 12	89.6
Univ. of Calif., Med. Dept., Calif		5, 15, 12	89
Univ. of Calif., Med. Dept., Calif		5, 15, 12	88.7
Univ. of Calif., Med. Dept., Calif		5, 15, 12	87.7
Univ. of Calif., Med. Dept., Calif		5, 15, 12	87.3
Univ. of Calif., Med. Dept., Calif		5, 15, 12	86.7
Univ. of Calif., Med. Dept., Calif		5, 15, 12	86.1
Univ. of Calif., Med. Dept., Calif		5, 15, 12	83.9
Univ. of Calif., Med. Dept., Calif		5, 15, 12	77.5
Univ. of Calif., Med. Dept., L. A., Calif		6, 20, 12	93.7
Univ. of Calif., Med. Dept., L. A., Calif		6, 20, 12	93.4
Univ. of Calif., Med. Dept., L. A., Calif		6, 20, 12	92.1
Univ. of Calif., Med. Dept., L. A., Calif		6, 20, 12	91.8
Univ. of Calif., Med. Dept., L. A., Calif		6, 20, 12	89.3
Univ. of Calif., Med. Dept., L. A., Calif		6, 20, 12	89.
Univ. of Calif., Med. Dept., L. A., Calif		6, 20, 12	86.8
Univ. of Calif., Med. Dept., L. A., Calif		6, 20, 12	86.4
Univ. of Calif., Med. Dept., L. A., Calif		6, 20, 12	85.
Univ. of Calif., Med. Dept., L. A., Calif		6, 20, 12	84.7
Univ. of Calif., Med Dept., L. A., Calif		6, 20, 12	84.3
Univ. of Calif., Med Dept., L. A., Calif		6, 1, 11	83.5
Univ. of Calif., Med. Dept., L. A., Calif		—, —, 11	79.4
Amer Med. Missionary Coll., Ill.		6, 16, 02	75.8 plus 5-80.8
Bennett Med. Coll., Ill.		5, —, 07	75.
Chicago Coll. Med. & Surg., Ill.		5, 18, 09	83.4
Coll. P. & S., Chicago, Ill.		5, 20, 02	87.2 plus 5-92.2
Coll. P. & S., Columbia Univ., N. Y.		6, —, 11	87.3
Columbia Univ., N. Y.		6, 7, 11	84.4
Cornell Univ. Med. Coll., N. Y.		6, 15, 10	83.6

Denver & Gross Coll. of Med., Colo	5, 14, 08	83.7	
Denver Homeo. Med. Coll., Colo	5, 10, 06	78.4	
Hahnemann Med. Coll. of Chicago, Ill	3, 26, 96	80.3 plus	5-85.3
Harvard Med. School, Mass	6, 29, 10	92.4	
Harvard Med. School, Mass	6, —, 09	85.2	
Harvard Med. School, Mass	2, 28, 12	77.9	
Howard Univ. School of Med., Wash., D. C	5, 10, 04	75.	
Jefferson Med. Coll., Pa	6, —, 06	83.6	
John A. Creighton Med. Coll., Neb	—, —, 96	75.2 plus	5-80.2
Johns Hopkins Med. School, Md	6, 11, 12	86.6	
Johns Hopkins Med. School, Md	6, 11, 07	83.5	
Kentucky School of Med., Ky	7, 9, 04	75.3	
Louisville Med. Coll., Ky	2, 16, 88	74.7 plus	10-84.7
Marion-Sims Beaumont Med. Coll., Mo	5, 29, 06	85.	
Med. Coll. of Ohio	5, 30, 05	91.	
Med. Dept. Wooster Univ., Ohio	—, —, 80	76.6 plus	15-91.6*
Med. Dept. Wooster Univ., Ohio	3, 13, 95	80.9 plus	5-85.9
Northwestern Univ. Med. Coll., Ill	6, 14, 12	82.8	
Northwestern Univ. Med. Coll., Ill	6, 14, 11	79.3	
Northwestern Univ. Med. Coll., Ill	6, 12, 12	76.1	
Ohio Med. Coll., Univ. of Cinn	3, 5, 91	78.7 plus	10-88.7
Royal Coll. of Phy., Ireland, R. C. Surg., Eng., Royal Coll. Surg. Edinburgh	2, 13, 85	83.6 plus	10-93.6
Rush Med. Coll., Ill	6, 12, 12	89.1	
Rush Med. Coll., Ill	6, 17, 03	87.1	
Rush Med. Coll., Ill	9, 1, 11	85.2	
Rush Med. Coll., Ill	3, 21, 07	85.1	
Starling Med. Coll., Ohio	4, 16, 03	75.6*	
St. Louis Coll. Phy. & Surg., Mo	3, 17, 97	80.8 plus	5-85.8
St. Louis Univ. Sch. of Med., Mo	—, —, 12	85.3	
St. Louis Univ. Med. Dept., Mo	5, 31, 12	83.7	
St. Louis Univ. Med. Sch. (Sims-Beaumont Med. Coll.), Mo	5, 19, 06	80.1**	
Tufts Coll. Med. School, Mass	6, —, 98	78.5 plus	5-83.5
Tulane Univ., La	4, 15, 93	83.2 plus	5-88.2
Univ. and Bellevue Hosp. Med. Coll., N. Y	6, —, 11	77.5	
Univ. of Colorado	6, 7, 11	84.4	
Univ. of Durham, Eng	4, —, 11	91.3	
Univ. of Edinburgh	—, —, 05	93.7	
Univ. of Edinburgh	4, —, 10	83.4	
Univ. of Illinois	5, 26, 03	88.	
Univ. Med. Coll. of Kansas Cy., Mo	3, 22, 00	85.1 plus	5-90.1
Univ. of Michigan (Dept. Med. & Surg)	6, 27, 12	89.8	
Univ. of Michigan (Med. Dept)	6, 21, 06	83.2	
Minneapolis Coll. Med. & Surg., Minn	6, 6, 06	84.	
Univ. of Minnesota	6, 13, 12	86.9	
Univ. of Minnesota	6, 3, 97	80.1 plus	5-85.1
Univ. of Nebraska (Coll. of Med.)	3, 17, 87	91. plus	10-101.1
Univ. of Oregon (Med. Dept.)	5, 1, 11	87.2	
Univ. of Pennsylvania	5, 2, 87	85.7 plus	10-95.7
Univ. of Pennsylvania	—, —, 78	75.9 plus	15-90.9*
Univ. of Pennsylvania	—, —, 12	89.6	
Univ. of Pennsylvania	5, 1, 91	75. plus	10-85.
Univ. of Syracuse (Med. Dept., N. Y.)	6, 14, 05	81.6	
Univ. of Vienna, Austria	12, 23, 10	86.1	
Univ. of Virginia	6, 12, 01	81.4 plus	5-86.4
Vanderbilt Univ., Tenn	3, 30, 98	78.1 plus	5-83.1
Washington Univ., St. Louis	6, 9, 10	80.9	
Washington Univ., St. Louis	5, 27, 09	80.7	
Washington Univ. (Med. Dept.), Mo	5, 25, 05	78.3*	
Western Pennsylvania Med. Coll., Pa	5, 28, 03	75.2	
Woman's Med. Coll., Pa	5, 17, 05	83.3	

Failed.

Coll. P. & S., S. F., Calif	6, 6, 12	72.4	
Coll. P. & S., S. F., Calif	6, 6, 12	63.4	
Coll. P. & S., S. F., Calif	6, 8, 11	59.9*	
Coll. P. & S., Univ. of So. Calif	6, 13, 12	70.5	
Coll. P. & S., Univ. of So. Calif	6, 13, 12	69.2	
Cooper Med. Coll., Calif	5, 9, 12	70.6	
Cooper Med. Coll., Calif	5, 8, 07	69.5	
Cooper Med. Coll., Calif	5, 9, 12	66.1	
Hahnemann Med. Coll. of the Pac., Calif	4, 26, 12	72.8	
Baltimore Univ. Sch. of Med., Md	—, —, 99	55.5 plus	5-60.5
Barnes Med. Coll., Mo	4, 3, 93	49.9 plus	5-54.9*
Cleveland Homeo. Med. Coll., Ohio	3, 22, 92	59.7 plus	10-69.7**
Coll. of Phys. & Surgs. of Baltimore, Md	3, 1, 82	69.1 plus	15-84.1
Harvard Med. Sch., Mass	6, 20, 12	72.9	
Kentucky School of Medicine, Ky	7, —, 06	67.7	
Laura Mem. Woman's Med. Coll	5, 7, 03	53.9*	
Lincoln Med. Coll., Neb	8, 1, 06	53.8	
Med. Coll. of Ohio	4, 4, 95	47.7 plus	5-52.7*
Miami Med. Coll., Ohio	3, 3, 73	67.4 plus	15-82.4
Northwestern Univ. Med. School, Ill	6, 12, 12	72.8	

Oakland Coll. of Med. & Surg., Calif	5, 28, 12	69.4
Royal Univ. of Naples, Italy	12, 18, 03	56.3***
Univ. of Illinois (Coll. Phys. & Surg., Ill.)	5, 28, 01	67.9 plus 5-72.9
Univ. of Louisville, Ky	6, 29 05	71.3**
Osteopathy—Passed.		
American Sch. of Osteopathy, Mo	6, 3, 12	81.
American Sch. of Osteopathy, Mo	6, 3, 12	80.7
American Sch. of Osteopathy, Mo	6, 3, 12	80.2
L. A. Coll. of Osteopathy, Calif	6, 1, 11	85.8
L. A. Coll. of Osteopathy, Calif	6, 6, 12	84.5
L. A. Coll. of Osteopathy, Calif	6, 6, 12	81.9
L. A. Coll. of Osteopathy, Calif	6, 6, 12	81.9
L. A. Coll. of Osteopathy, Calif	6, 6, 12	81.4
L. A. Coll. of Osteopathy, Calif	6, 6, 12	80.2
L. A. Coll. of Osteopathy, Calif	6, 6, 12	79.7
L. A. Coll. of Osteopathy, Calif	6, 6, 12	79.6
L. A. Coll. of Osteopathy, Calif	6, 6, 12	78.8
L. A. Coll. of Osteopathy, Calif	6, 6, 12	78.8
L. A. Coll. of Osteopathy, Calif	6, 6, 12	78.
L. A. Coll. of Osteopathy, Calif	6, 6, 12	77.4
L. A. Coll. of Osteopathy, Calif	6, 6, 12	77.1
L. A. Coll. of Osteopathy, Calif	1, 26, 12	76.2
L. A. Coll. of Osteopathy, Calif	6, 1, 11	75.9**
L. A. Coll. of Osteopathy, Calif	6, 6, 12	75.8
L. A. Coll. of Osteopathy, Calif	6, 1, 11	75.**
L. A. Coll. of Osteopathy, Calif	6, 6, 12	75.
Pacific Coll. of Osteopathy, Calif	6, 20, 12	89.2
Pacific Coll. of Osteopathy, Calif	6, 20, 12	81.3
Pacific Coll. of Osteopathy, Calif	6, 20, 12	79.8
Osteopathy—Failed.		
American School of Osteopathy, Mo	6, 22, 05	69.2
American School of Osteopathy, Mo	6, 3, 12	58.7
L. A. Coll. of Osteopathy, Calif	6, 1, 11	72.3*
L. A. Coll. of Osteopathy, Calif	6, 6, 12	72.
L. A. Coll. of Osteopathy, Calif	6, 6, 12	70.2
L. A. Coll. of Osteopathy, Calif	6, 6, 12	67.5
L. A. Coll. of Osteopathy, Calif	1, 26, 12	67.3
L. A. Coll. of Osteopathy, Calif	6, 1, 11	60.8
L. A. Coll. of Osteopathy, Calif	1, 27, 10	60.5***
Pacific Coll. of Osteopathy, Calif	6, 20, 12	69.9
Philadelphia Coll. and Inf. of Osteop., Pa	6, 22, 05	56.

*Taken before.

New Licentiates—Medical Doctors.

J. H. Adams, Thomas Addis, Ralph E. Allen, F. X. Ammann, S. B. Axtell, S. E. Bailey, H. D. Barnard, J. W. Barnes, W. A. Beattie, Ida A. Beck, M. E. Bettin, John E. Bohm, J. S. Brown, Chas. Burnside, H. C. Bush, G. W. Cahoon, Maud F. Cain, F. J. Casper, J. E. Chapin, H. W. Chappel, V. C. Charleston, Ira J. B. Clark, Sr., Ernest W. Cleary, H. O. Cleland, W. F. Collins, C. S. Compton, E. H. Crabtree, C. W. Craik, E. C. Davey, Walter W. Davis, S. M. Deakin, C. J. Dean, Jas. R. Dillon, L. Dozier, H. B. Duncan, Jas. Eaves, W. L. Ellis, C. L. Evans, E. E. Ewing, E. S. Fish, H. J. Flinn, Jas. L. Flint, C. G. Foote, Frank A. Fove, G. C. H. Franklin, G. B. Fundenberg, W. C. Gordon, H. M. Griffith, J. D. Hadden, H. W. Haight, G. J. Hall, W. E. Hall, T. M. Hart, P. F. Haskell, G. A. Hawkins-Ambler, D. L. Hirschler, C. L. Hoag, A. O. Holmes, F. M. Hull, R. C. Hunt, R. K. Hutchings, M. Jones-Mentzer, J. R. Jones, I. W. Jones, F. L. Kelly, F. W. Kroll, L. Langstroth, H. E. Law, R. S. Leachman, N. A. Leake, L. E. Lepper, C. W. Lippman, T. C. Little, C. W. Locke, H. E. Long, R. Lorentz, Jr., O. S. Lowsley, W. M. Malone, E. P. Martin, Jas. H. McClelland, H. M. McDonald, J. E. McKillop, W. T. McNeil, M. A. Mellenthin, L. O W. Moore, D. S. Moore, F. W. Muller, F. H. Nelson, R. C. Nichols, C. W. Nutting, Jr., H. B. Osborn, H. R. Parker, J. L. Parker, V. Parkin, R. H. Parkinson, G. E. Patric, Jas. S. Perkins, C. E. Phillips, I. S. Platt, D. R. Powell, A. R. Powers, W. F. Priestley, L. D. Prince, E. Purcell, W. W. Reber, H. C. Rees, W. W. Rhyan, H. W. Rice, L. Riker, O. Rockwell, A. E. Roome, C. M Rosin, J. A. Samaniego, A. E. Schmidt, C. E. Schwartz, H. W. Spiers, R. H. Shippey, J. F. Sigwart, E. P. Smart, W. B. Smith, F. A. Speik, E. S. Stadtmuller, L. L. Stanley, L. Stovall, S. P. Strange, W. H. Strietmann, C. D. Sweet, D. P. Thurber, W. G. Thurber, G. E. Walton, J. Weinberger, T. F. Wier, J. C. Wilson, L. E. Wilson, P. W. Wilson, A. G. Woodward, F. A. Woodward, P. Wright, W. L. Yager, O. Zajicek.

New Licentiates—Osteopaths.

K. P. Baber, L. G. Barker, H. E. Beckwith, W.L. Bigham, S. Bovce, B. B. Broderick, F. H. de-Pencier, F. A. DeWolf, I. H. Durfee, C. C. Edmiston, C. E. Gostick, O. C. H. Gotsch, V. R. Lee, R. E. Lee, J. B. Lenhart, G. A. R. Meiss, M. M. Meleski, W. A. Nicolson, L. G. Robb, K. E. Seeburger, L. L. Shell, E. P. Sherrill, A. L. Taylor, Sydney Talbot.

New Licentiates—Honorably Discharged United States Surgeons.

I. E. Bennett, Jefferson Med. Coll., Pa., 1891.

John Carling, N. Y. Univ., 1898.

Fred J. Conzelmann, Med. Dept. Univ. of Michigan, June 22, 1895.

John O'D Creaghe, Royal Coll. of Phys., Ireland, 1869, R. Coll. Surgs., Ireland, 1865, and Faculty of Med. of Buenos Ayres, 1874.

Wm. F. de Niedman, Howard Univ. School of Med., Wash., D. C., 1884.

A. H. Guernsey, Rush Med. Coll., Ill., 1870.

E. S. McClelland, Rush Med. Coll., Ill., and Army Med. School, Wash., D. C., March 12, 1909, and May 31, 1910.

J. A. Metzger, Med. Dept. Univ. of Pa., 1895.

Wm. E. Purviance, Jefferson Med. Coll., Pa., April 3, 1889.

J. D. Yost, Harvard Med. School, Mass., 1898.

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PHILIP MILLS JONES, M. D., Secretary and Editor

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Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

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EDITORIAL NOTES.

"STRAW MAN" OR FOOL-MAN?

The Fresno *Republican*, in its issue for October 3rd, refers to an editorial in the JOURNAL for September in which we said that the Governor had been quoted as saying that he desired to see a reciprocity amendment to the present medical law that would permit anyone licensed in any state to get a license and be permitted to practice in California. The *Republican* says: "Of course there is no possibility that Governor Johnson ever made so foolish a remark; in fact, we do not know that he has given this question of medical reciprocity any attention at all." There are quite evidently a good many things that the *Republican* does not know and a good many things that it ought to find out if it is the purpose and intention of the *Republican* to serve the best interests and the future health of the people of California. And by-the-way, how can the *Republican* speak so positively, be so cock-sure that the Governor never made "so foolish a remark"? Is the *Republican* in possession of absolute knowledge of everything the Governor has ever said? How wonderful, to be so well posted; and what awful liars the men were who told us that the Governor *had* made that statement to them! (Singularly, all of these men had taken the examination, failed to pass and then gone to the Governor to see if he could help them!) If the *Republican* is so thoroughly posted on what Governor Johnson has and has not said, and by implication, upon what Governor Johnson has or has not given attention to, why, then, we would ask the *Republican* to tell us just what reasons Governor Johnson had for doing the following things:

Approved an amendment to the medical law drawn in the interest of a notorious quack and allowing anyone who had successfully broken the law of the state for 15 years to get a license to continue to be a quack!

Vetoed a bill appropriating funds for the State Board of Health to continue its small share of the burden of plague-infected squirrel destruction, thus left the State Board of Health absolutely without funds almost compelling the Federal authorities to stop their part of the work.

Vetoed or allowed to die somewhere in the neighborhood of 80% of all the public health bills that managed to get through the legislature.

Is there anything in these acts, which can be very easily verified or disproved, to make one have unfaltering faith in the intention of Governor Johnson to strengthen rather than to break down laws intended for the protection of the people? Can the *Republican* explain these matters to our benighted intelligence? Does the *Republican* know that a few years ago, when the medical standards required in this state were the same as they are now and when there was a clause in the law permitting reciprocity, New York refused to reciprocate with California on the ground that our standards were too low? This also can be easily verified or disproved so it can hardly be a part of the "straw man" the *Republican* accuses us of erecting. Can the *Republican* give us any information on these matters or can it merely call names and impugn motives?

PESSIMISM OR SENSE?

Last month the JOURNAL published an editorial note referring to the attitude of antagonism toward all things related to scientific medicine and public health which some have considered too "pessimistic." They would not so consider it were they to a greater degree conversant with the facts or could they realize the true import of daily happenings. Let us consider some things in and about the *Long Island Medical Journal*, the Official Organ of the Associated Physicians of Long Island; presumably, owned by them. In the September number is an editorial entitled "What is the public doing for us?" The first sentence is this: "Last winter and spring the medical profession came in for more than its share of unfair criticism at the hands of the daily press and a few of the monthly magazines." You see, on Long Island the feeling of unrest and antagonism is recognized. A letter is included in the editorial; it refers to a newly organized "Physicians' League" which shall deal with economic and sociologic problems only; such things as lodge practice, rich patients and dispensaries, losing patients to hospitals, adverse legislation, etc. The suggestion all through this and two other editorials in the same issue, is that physicians should organize and force the public to behave. But let us see where these evils are. "Lodge practice"; an evil strictly within the medical profession due to greed or necessity; commercialization of a learned profession; medical treatment at cut rates. "Rich patients and dispensaries"; again an evil strictly within our profession due to greed for "material"; building up a

clinic; surpassing some other fellow. "Losing patients to hospitals" has much the same etiology as the dispensary evil; personal selfishness and greed; it, too, is an evil within the profession for members of the medical profession permit it. It is unfair to blame the public for what we ourselves permit to be done to us; the layman is merely a human being and as such will take anything free that is offered him; he is as keen to get something for nothing as is the doctor! Let it not be thought that these remarks in the *Long Island Medical Journal* are from the pen of some irresponsible "socialist"; they are signed "Paul M. Pilcher." Another editorial in the same issue, dealing with the same subject, pleads for some great leader who shall make "practically effective the principle that service rendered the sick poor should be a charge upon the State." Why should the state pay anything when physicians themselves are falling over each other in the desire to give this service for nothing? Again, an evil within our own profession which we must cure and not ask to have the public cure it for us. And further, the advertising pages of this same journal show another evil; the editorial writers, who presumably are members, live and speak and write on an exalted plane of beneficence but they are willing to participate in the proceeds of the nostrum parasite by accepting the advertisements of Fellows' syrup; Gray's glycerine tonic; bovinine; sanmetto; salhepatica; antiphlogistine; glycothymoline; Hagge's cordial; ergoapiol. Begin to clean house and cure your own diseases, gentlemen of Long Island, and the public will have more respect for you; there is no single evil of which you have spoken that is not of a cause and an existence within yourselves.

ANOMALOUS CONDITIONS.

From Oklahoma comes a loud wail of anguish because the "rights" of the physician are in danger at the hands of legislature and congress and the open demand is made that physicians should establish a medical lobby and raise a fund for that purpose. What singular degradation! A learned profession to engage in the dirtiest of all occupations! And what "rights" has a physician? If laws regulating the practice of medicine were intended for the benefit of physicians, they would be unconstitutional; they are intended to protect the public against ignorance; if the public ceases to desire this protection, then the laws are changed and the people suffer. From Kansas comes the cry that the medical profession does not have the standing and the respect that it should have and the blame is placed upon the public for lack of sufficient appreciation. Everywhere the same condition of unrest, of antagonism to scientific medicine, is at last being noticed by those who should have seen it begin several years ago. But most of the unpleasant symptoms are due to faulty metabolism—or something worse—in the body medical. From one of our own counties comes the cry that members are taking the $3.00 fee for insurance examinations and the request to know what the society can do about it. It is stupidly simple; it is one of our own personal ailments; if no decent doctor would accept less than $5.00 that would be the minimum fee. If no decent doctor would take the pennies that come from the lodge practice business, then regular fees would be paid for the work. If "professors" and others of less magnitude would refrain from the mad scramble to get "material," then we would not have the clinic abuse. If physicians would not work for hospitals or hospital associations for less than their regular fees, then we would not have the hospital abuse. If physicians were to follow closely the path of common honesty, then we would not have the public disapproval of that petty graft, division of fees and commissions from druggists and similar concerns. Some oculists expect and demand as much as fifty or sixty per cent. "commission" from the optician to whom they send their patients for glasses. When are we going to begin to clean house? Shall we do it ourselves or shall we wait until the public does it, forcibly and unpleasantly, for us? An applicant at the last examination of the Board of Medical Examiners called upon a number of physicians in San Francisco, said he was going to locate there, mentioned the line of work he would take up and stated that he would pay a regular "commission" of 50% for all work sent to him. He passed and got his license and doubtless already has some business; is he any worse than the men who accept the "commission"? Can we ask for or expect much public esteem when we do that sort of thing?

OHIO'S PLIGHT.

The *Lancet-Clinic,* of Cincinnati, in its issue for September 28th, contains an editorial entitled "Political Duty of the Profession." It is quite an interesting editorial and recites the improvement in college standards and work since 1896 when a state law creating a licensing board went into effect, and the better quality of physician thus furnished to the people of Ohio. "It would seem that this advanced professional standard should meet universal approval, and not be subject to constant attacks as it is in every session of the legislature." The article then goes on to state the fact that, somehow, this improved standard does not meet with "universal approval"; that various interests, cults, sects, patent medicine people and the like are banded together to do away with the protection to the public afforded by the medical law. "To preserve our present standard, a determined fight must be made. Those who would prey on the sick and ignorant are more aggressive and better organized than they have been for years." Etc. Reading between the lines one may safely conclude that the situation in Ohio is much the same as it is in California and as complained of in the *Long Island Medical Journal.* The up-growing wave of unrest; of rebellion at control, even intellectual control; the demand of the ignorant for unlimited suicide—or what it calls "thought"—of "freedom" to choose its own mode of death. If the people want absolute freedom to be preyed upon, to have

and to hold and to develop diseases and epidemics, they will have it; we, as a profession, cannot fight them; *you cannot fight sense into anyone* any more than you can legislate honesty into anyone; you cannot fight a crazy man into sanity, and the people seem to have gone crazy. We extend a heartfelt and understood sympathy to Ohio for California is in no less danger from the insanity of its citizens.

CHANGES COMING.

The old order of things in California is changing very rapidly and soon we shall hardly know our own state. With the opening of the canal there will be a wave of immigration into the Western coast of the United States that we shall be unable to realize until it actually begins. Already agents of at least three countries that supply the United States with a large proportion of its immigrants, have been located in California, studying conditions, making plans and preparing the way for what is to come; one of them has been here, it is said, for a year and a half. A large shipping firm in San Francisco has already contracted with one of the large steamship companies of the world to handle its business in San Francisco and arrangements have been completed for a direct line of steamers of large carrying capacity from the ports of Southern Europe to San Francisco for the almost exclusive purpose of bringing in immigrants. It is estimated that the cost of landing them in California will be only a very few dollars more than the cost to New York. What effect will this tremendous influx have upon the medical situation? Undoubtedly, a profound one; there will be a great influx of physicians—and quacks as well, if the wishes of the Governor, as he has been quoted, and of some of the "leaguers," eddyites and others are to be carried out by the legislature. Evil and chaotic days are sure to come and we might as well recognize the fact that they are coming and, in some small way, be ready. Every effort should be made to solidify our county medical units; to make them more and more the solid, scientific-medicine element of each community; to make membership in a county medical society a sort of "hall mark" in medicine.

CHANGE IN LAW.

The last Congress made an important change in the Postal Laws referring to second class mail; dues of members of scientific societies are now definitely accepted as legitimate subscriptions provided the dues are not less than 50% of the subscription price of the publication issued by any such society. That means that hereafter there will be no confusion as to dues and subscription to the JOURNAL; the assessment for 1913 will be, as fixed by the House of Delegates last April, $4.00 per member and every member will receive the JOURNAL.

APPRECIATION? NO! ABUSE!

The energetic efforts of the medical profession to protect the people against preventable diseases and epidemics are evidently neither desired nor appreciated by the people. In San Francisco and other places, great resentment was expressed because the medical profession urged strict muzzling laws in order to stamp out rabies—a disease so easily prevented and yet so entirely incurable. In various parts of the State we have to-day smallpox; and *at last* the type has changed and become virulent, just as has been expected. And yet the people do not want protection against this easily prevented disease; they will wipe out even the present poor vaccination law at the next session of the Legislature. They will not allow the State Board of Health to properly guard and control sources of water supply, and so a number of sections are having epidemics of typhoid—another easily prevented disease. In the South, the physicians of Los Angeles forced an active and successful fight against poliomyelitis; did the people appreciate it? Not at all; they heaped abuse upon the men who had given their time and their work for the people's benefit. Quarantine "hurt business"! Dr. Powers, the health officer, was lied about and slandered to an unthinkable degree. In Riverside, an almost ideal community of intelligent people with a good and much respected medical society, poliomyelitis made its appearance with a mortality of one-third. The health officer was energetic and soon had the epidemic stopped. Did the intelligent community appreciate his effort? Not at all. The moving-picture men and other business men instigated an attack upon the health officer that seriously injured his practice and he resigned, after stopping an epidemic of a deadly and easily preventable disease. The interests prevail; the freaks and agitators are paramount; the people do not want to be protected from contagious or preventable diseases. It is foolish of us, as a profession, to try to force intelligence into the people at large. Let them take their dose of smallpox, typhoid, poliomyelitis, rabies and everything else they want. Let us have a really good epidemic of smallpox and then see what the people want to do about it. It is wrong for us to try to thrust our services upon them; they should come to us and ask for our assistance, when it will be cheerfully given; and then they will appreciate it. The cry of the freaks is "freedom of thought; freedom for the sick person to be treated by anyone and in any way he desires." That simply means freedom for the individual to commit suicide in any way he chooses or be robbed to the limit. But if that is what the people, for the moment, want—why, then let them have it; let them take their dose of bitter medicine and get over with it. What sense is there in serving them merely for the reward of abuse, when they don't want the service?

EDDYITE PROFITS.

It is easy enough to understand why the gay and festive eddyite quacks and "readers" and the like are opposed to everything that makes for public health or the lessening of disease. The more disease there is, the more "absent treatments" and "healings" they will be called upon to do. Giving "absent treatment" to a smallpox, typhoid or tuberculous patient is a neat, clean, safe and exceeding profitable occupation. There is no danger of personal contagion and there is no outlay of time or money for study, equipment, office rent, etc. It is all just "cold turkey" and the more sickness and disease in the community, the more money for the "reader" and the "healer." The wife of our good Senator Works is said to be a "healer"; can it be that purely business reasons lead the Senator to oppose national public health legislation? It is hardly reasonable to predicate for one class of people nothing but the most perfect brand of purity of motive and for another class nothing but the basest of designs; it is not reasonable to assume that all eddyites are without guile and all physicians full of it. Human nature is very much human nature wherever you find it. And one must not forget the safety and the comfort—to say nothing of the great harvest—in giving absent treatments at several dollars per!

"STICKERS" BRING COIN.

At the time of writing we have been sending out the packages of stickers to be pasted upon bills and thus jog the mind of slow-pay patients only about a month, yet several requests have come in for more of them. One man writes: "I made use of the stickers you were kind enough to send me and they worked so well that I am anxious to secure more. How can I get them?" That came from San Bernardino County. A member in San Francisco called at the office and rather smilingly and somewhat doubtfully took away a packet, remarking that he was afraid they would hardly do for his patients; six days later he came in and got two more lots, saying that they worked remarkably well. There are still some on hand to be had for the asking; just drop a line to the Secretary, Dr. Philip Mills Jones, Butler Building, San Francisco, and you will get a set by return mail. They are sent only on request for the Council thought that if a thing was not worth asking for it was not worth while sending unasked. The present supply will be sent free upon request; whether, when these are exhausted, they will still be sent free or whether a small charge—just enough to cover the cost—will be made, are questions that the Council will decide later on.

A suggestion to County Secretaries: Why not use these on the bills you send out for dues to those members who are forgetful and put off paying their dues?

IMPORTANT MEETINGS.

The week of September 23rd to 28th saw two very important meetings in this country; one, at Washington, the International Congress on Hygiene and Demography, was of the greatest importance to the whole country and, in fact, to the whole scientific world. The other, at Berkeley, the meeting of the health officers of the state, was also very successful and will have a far reaching influence for good. The public health exhibition at Washington is said to have been remarkably good. It opened September 16th and remained open to the public till October 4th, being visited by many thousands of people. Some of the most interesting discussions at the Berkeley meeting are reported to have been raised by the introduction of questions outside of medicine but directly related to it, as for instance the housing problem and the inspection of schools and school children. It would seem to be a good idea to have one or more sessions of this sort in connection with the annual meetings of the State Medical Society.

BITING FLY INDICTED.

Poliomyelitis was the subject of a most interesting discussion at the International Congress and it is quite evident that our knowledge concerning this disease is being rapidly increased. Dr. M. J. Rosenau, of Boston, reported some exceedingly interesting experiments of his own in which he seems to have proved within reasonable doubt that the disease is transmitted by the biting fly, or Stomaxys calcitrans, a most vicious and voracious fly that is found quite commonly in and around stables and in their vicinity. It can easily bite through a cloth garment or the hide of a horse or cow; its diet is blood and it does not seem to care for anything else. These flies were caught and allowed to feed upon monkeys confined in screened cages and with all the checks, controls and safeguards accompanying scientific experimental work. Monkeys were then infected with poliomyelitis, the flies were allowed to feed on them and were then transferred to other cages containing healthy monkeys. Of twelve healthy monkeys so exposed, six, at the time of reporting, had symptoms of the disease, three in a virulent form, and two or three others were beginning to show symptoms. It seems to be evident that, no matter what other modes of introduction of the virus may exist, and there are probably others, the fly must stand for the indictment of being at least one of the agents in disseminating this terrible disease.

ORIGINAL ARTICLES

THE VALUE OF PRISMS IN EYE STRAIN.*

By A. S. GREEN, M. D., San Francisco.

Before entering into a consideration of the therapeutic value of prisms, it will be necessary to establish the existence of two distinct varieties of heterophoria, viz:

(a) The pseudo-heterophoria, or that caused by an error of refraction; and

(b) The true or structural heterophoria due to some anatomical abnormality.

The existence etiologically of two such separate forms is not universally admitted, as some ophthalmologists contend that heterophoria is always the result of a refractive error.

We will dismiss, for the present, the first form, the existence of which is not in dispute, and endeavor to show a firm basis for the existence of the second variety—the true heterophoria.

In view of the comparative frequency of the gross abnormalities, it seems strange that there should be any doubt as to the occurrence of the minute anatomical deviations necessary to produce muscular imbalance. However, surgeons, anatomists and pathologists give ample proof of their frequency.

Congenital anomalies are found throughout the body. These, in the gross abnormalities, range in degree from the complete transposition of the organs of the body to a slight deviation of the nasal septum. Pertaining to the eye, there may be defects and irregularities in development of the eyelids, the globe of the eye, or any of its component parts. These may consist of almost any variety or proportion, from the very rare conditions of complete absence of the bulb (anophthalmia), to the more frequent coloboma and congenital ptosis.[1]

With this very brief reference to anomalies in general, we will pass to the special anomalies of the eye, or its contiguous structures that are the causative factors of the true heterophoria. These are:

I. A difference in the size and strength of opposing extra ocular muscles. This may be due to a congenital or inherited hyperplasia, or hypoplasia of an otherwise perfectly formed muscle.[2]

II. A muscle may be absent or there may occur a reduplication of muscles; the two heads of the external rectus have been seen separate to their insertion, forming a double muscle.[3]

III. A difference in the attachment, one muscle being attached farther forward than the other. There may be a variation of several mm. in individual cases in the position of the insertion of a muscle back from the cornea.[4] As the extreme length of these muscles with their tendon is only from forty to forty-five mm., it becomes apparent that such slight deviations might easily result in a disturbance of the muscle balance.

IV. Malformations of the orbits, in their horizontal and vertical relationship to each other: If the orbits are too close together, esophoria is likely to be the result; if too far apart, exophoria; if one orbit is higher than the other, hyperphoria will probably be evident.[5]

Risley[6] recently measured several hundred skulls and noted a marked variation in the size of the orbits. His conclusions are that anomalously shaped orbits were most likely to induce modification in the form and shape of the eyeballs, and in the length, origin and region of attachment of the muscles—conditions that were sure to induce disturbances of motility.

V. An anomalous inervation of a muscle: This may be due to a faulty distribution of the peripheral nerve fibers or a relatively small number of fibers. On account of pressure upon a nerve at any point in its course, an atrophy may result, with consequent impairment of function of the muscle to which it is distributed.

These are the principal causes of true hetrophoria and are frequently associated with eyes that have very little or no refractive error.

According to the 1910 report of the Committee of the American Medical Association on the Ocular Muscles, heterophoria was found in 45 per cent. of normal individuals.[7] Under the conditions of the examinations, the imbalance in a large number of these must have been a true heterophoria. The unfortunate possessors of such anomalies are the ones that are knocked from pillar to post in their efforts to obtain relief from their headache, or other form of asthenopia. Even though their refractive error be corrected, this usually does not suffice to give relief. To one who has seen, in these cases, the marked benefit derived from a correction of the imbalance, its neglect seems reprehensible indeed. We are certainly not justified in the supposition that eye strain is always and only associated with a refractive error. To quote Savage:

"The ciliary muscle is only one of eight muscles connected with each eye; and each of the seven other muscles is capable of developing symptoms, if physically unfit."

It must be admitted, however, that there are cases of heterophoria without apparent eye strain, just as there are refractive errors without symptoms. The eye strain of heterophoria does not differ materially in kind or severity from that produced by errors of refraction. Why such symptoms are not relieved by merely correcting the refractive error, we shall endeavor to indicate.

At the risk of being considered pedantic, it will be necessary for the sake of clearness to review the well known close association of the functions of accommodation and convergence. The muscles of accommodation and convergence are supplied by the same nerve—the oculomotor. Their nuclei beneath the aqueduct of Sylvius are in juxtaposition. When one is excited into activity, the other acts or stands ready for action. Therefore, if normal, whenever the eyes are called upon to accommodate, there is a tendency to converge to a corres-

* Read before the Eye, Ear, Nose and Throat Section of the San Francisco County Medical Society, March 26th, 1912.

ponding degree. In other words, 1 D of accommodation calls for one meterangle of convergence. Accommodation and convergence act in harmony. They can be dissociated to a limited extent only. With the visual axis in the primary position, an emmetrope possessing a total of 10 D of accommodation, can use only from 3 to 3½ diopters, unassisted by the convergence.[9] Let us now take as an example a young hyperope of 1 D, with normal extraocular muscles. In order to see distinctly, even at infinity, he has to use 1 D of accommodation. This demand upon the centers of accommodation excites a tendency to activity to a corresponding degree in the centers of convergence, which tendency is, however, kept in check by the fusion faculty.[10] This is made manifest as an esophoria by the various tests, such as the phorometer, Maddox rod, etc. A correction of the hyperopia will also correct this pseudoesophoria and thus relieve all asthenopic symptoms. In testing, the full amount of this form of esophoria will be shown only without the refractive correction before the eyes. With the full correction on, by relaxing the accommodation, it is apt to show orthophoria. Occasionally, the accommodative effort to correct a hyperopia will not only produce an esophoria, but also a hyperphoria. This, likewise, will disappear under a correction of the refractive error.

If, instead of a normal muscalature, this hyperope of 1 D had an excessive power of divergence—a true exophoria, due to any one or more of the anatomical anomalies (the externi recti being relatively stronger than the interni), how can the correction of the hyperopia help the exophoria? A little reflection will show the fallacy of such a procedure. In order to have distinct vision even at infinity, this hyperope has to use 1 D of accommodation. This extra stimulation sent to the muscles of accommodation is also shared, through its close association with convergence, by the weak interni, which are thus assisted to that extent. But, if the hyperopia be corrected, the accommodation for distance is not called into play and the convergence is deprived of the assistance otherwise given to it by the accommodation. It should thus be evident that if with hyperopia or hyperopic astigmatism we find an exophoria, this must be a true heterophoria,[11] for if the hyperopia had any effect at all on the exophoria, it would be to decrease the amount. One frequently finds the orthophoria associated with hyperopia changed to an exophoria when correcting glasses have been worn for some time, and the accommodation thus relaxed.

Likewise, a low hyperopia or emmetropia associated with exophoria will often be converted into a pseudomyopia brought about in the following manner: in order to avoid crossed diplopia, the weak interni call for extra stimulation. This stimulus, besides being sent to the converging muscles, may be sent to an equal amount to the ciliary muscles, causing sufficient accommodation, not only to correct the hyperopia, but to even overcorrect it, and produce a pseudomyopia.

It will not be necessary to enter separately into the different kinds and degrees of refractive errors associated with the different varieties of true heterophoria. The same reasoning applies to all. For instance, esophoria associated with myopia bear similar relations to each other as exophoria with hyperopia.

When we come to the treatment of heterophoria, we find several methods advocated. The claim of those who follow the teaching[12] that a correction of the refractive error is alone sufficient is no more rational than the claim that hyperopia of less than 1 or 2 D needs no correction. Correcting the refractive error alone is usually all that is required in hyperopia with esophoria or myopia with exophoria, unless these heterophorias are excessive in amount because of an associated anatomical error, i. e., a pseudophoria plus a true phoria. For the true heterophorias, additional measures will be needed. These may be:

1. Operation;

2. Rythmic exercise, with prisms or other means;

3. Prisms in position of rest.

We will first consider operation. Practically all authorities agree that an operation must be resorted to if symptoms persist after a trial of the refractive correction, exercise or prisms. The higher degrees of imbalance—vertical deviations of over 5° and horizontal deviations of over 10° to 12° will usually have to come to operation.

Savage lays down the dictum that exophoria that gives diplopia at a distance under the red glass is practically always a case for operation.

Coming now to exercise, we find that this as a means to strengthen weak ocular muscles has many enthusiastic supporters. This method, however, is more limited in its usefulness than some of its exponents are willing to admit. At the best, it is only the low degrees of heterophoria (6°) can be converted into orthophoria by rythmic exercise.[13] Duane claims that exercise is serviceable mainly in the young, and, unless it begins to produce results in two months, it is not likely to be of any great service.[14] And there is a physiological basis for this claim. Aside from the fact that exercise is hard to carry out unless done at the physician's office (for few patients will conscientiously persist in it), there is evidence to show that not only is exercise usually not serviceable, but it may actually be harmful. The result aimed at with exercise is to produce a stronger or hypertrophied muscle. The degree of hypertrophy that can be obtained depends largely upon the age—the younger the individual, the greater will be the resultant development from exercise.[15] But, even if obtained, is this over-development desirable? The evidence that we gather from pathologists would indicate not. *The hypertrophy from excessive exercise may result in atrophy.*[16] We have examples of this in the dilated heart, which follows its hypertrophy; the atrophy of the muscles of the upper arm in blacksmiths; of the muscles of the forearm controlling the finer finger movements in piano play-

ers, etc. The recent report of the Surgeon-General of the Navy on the later results following competitive athletics is very significant, and bears further testimony as to the banefulness of excessive exercise. In order to maintain binocular single vision, an individual with a true heterophoria has to use an excessive amount of muscular energy under the most favorable conditions. If to that be added rhythmic exercise with prisms, or other means, the original weak muscles are overburdened to just that extent, and permanent harm must often follow.

When we come to the use of prisms to be worn with bases over the weak muscles, we find some difference of opinion. Fuchs,[18] Maddox,[19] Savage,[20] Jackson,[21] and Weeks[22] are among those who recommend their employment in selected cases. Duane and De Schweinitz[23] claim that their use is not generally advisable, as they often tend to increase the deviation. They make no distinction, however, between the true heterophoria and pseudo-heterophoria, and give no reason for their contention. In this connection, I will quote Weeks,[24] who says:

"In many cases of esophoria and exophoria in which prisms are prescribed, the degree of the phoria will appear to increase on the use of the prisms. This is due many times to the relaxation of overstrained muscles, in which case the development of the phoria will cease when a natural balance has been reached."

This explanation is logical. Beyond relaxing the muscles to their normal tone of contraction, it is not apparent what prisms could do that would in any way weaken them. All that is sought with prisms is to remove from the ocular muscles the extra load they were compelled to carry and thus place them on a par with normal eyes. And, like normal eyes, they will still be compelled to use their muscles to maintain binocular single vision and thereby get sufficient exercise to remain healthy, but eliminating the excessive exercise that sooner or later may lead to atrophy.

It must be remembered that only the lower degrees of heterophoria can be corrected with prisms, although occasionally patients will wear with great benefit as much as a 5° prism on each eye. Usually the greatest satisfaction is obtained where only a total of from 1° to 4° are required.

In dealing with refraction cases, the following methods have been eminently satisfactory to the writer:

1. In hyperopia with esophoria for distance and near, give a full correction of the refractive error, to be worn constantly. This will relieve the strain on the ciliary muscles and internal recti.

2. In hyperopia with orthophoria for distance and 3° to 4° of exophoria near, an under-correction of the hyperopia will usually suffice.

3. In hyperopia with orthophoria for distance, but 6° to 10° exophoria for near, give a partial correction of the hyperopia, combined with 1° to 3° prism base in over each eye, for near use only. The interni in such a case need the prisms at the near point, but would not tolerate them for distance.

4. In hyperopia with 6° to 8° of exophoria for distance and 10° to 12° near, give a partial refractive correction combined with a 1° to 3° prism base in over each eye for constant wear.

5. In hyperopia with esophoria combined with hyperphoria, the correction of the refractive error will frequently correct the muscle imbalance.

6. In hyperopia with exophoria combined with a hyperphoria, it will usually be necessary to correct a part of the hyperphoria as well as a part of the exophoria.

7. In myopia with exophoria, give the full refractive correction. This may have to be modified in an adult who has never worn glasses, so as to avoid retinal fatigue.

8. In myopia with esophoria, an under correction of the refractive error with decentration of the lenses will be indicated.

These rules are only general, and variations will have to be made in individual cases, as to the strength of the focal correction and prisms.

Where the refractive correction will allow, it is better to decenter a lens rather than order a prism. Lenses are now made allowing a decentration of 5 to 6 mm. Decentering a 1 D lens 10 mm. gives a prism of 1°, so that in the stronger lenses it is often easy to obtain the desired prismatic correction by decentration. It is well to see that the patient does not get an undesired prismatic effect due to faulty adjustment of the glasses. One frequently sees glasses with their optical centers too wide or too narrow, with a consequent eye strain. This is quickly relieved in many cases by a proper adjustment of the frames.

In conclusion, it may be well to call attention to the correction of presbyopia. Along with the failure of the accommodation, we frequently have a weakened convergence. The internal recti, as well as other muscles of the body, undergo senile atrophy, which is, strictly speaking, a physiological process. In such cases, if the lenses are decentered in, the patient will often be much more comfortable.

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LABOR IN MODERATELY CONTRACTED PELVES WITH SPECIAL REFERENCE TO CESAREAN SECTION.*

By HENRY J. KREUTZMANN, M. D., San Francisco.

Progress in science and practice of medicine has never been made in a steady, onward march, nor in a straight line; but always by leaps and bounds in a zig-zag line with many side steps. All the different branches of medicine are subject to this rule; obstetrics does not make any exception.

During the last years in the graver complications of delivery, such as eclampsia, placenta prævia and contracted pelvis, much rushing on and bounding forward has been done;—it remains to be seen how much of this is gain, how much has to be considered side-stepping; this is especially so in dealing with labor in a moderately contracted pelvis, and more especially so as far as Cesarean section in these cases is concerned.

Speaking about contracted pelvis we must be fully conscious that much is inexact and arbitrary here; we have as yet no method to measure the pelvis in the living woman correctly, and a sharp division in different classes is a practical impossibility. Still, in most cases the degree of narrowness of the pelvic inlet, the most important of all contractions, as expressed in its antero-posterior diameter, the conjugata vera, gives a fair idea of conditions present.

When the conjugata vera is 6 ctm. or below, the question is simple, nothing under any and all circumstances is left to do but to perform Cesarean section; with a slight, almost unnoticed contraction, conjugata vera 1 ctm. or less below normal, no deviation from the ordinary is observed, unless we have a large baby before us. The cases that occur in pelves with a conjugata vera between 6 and 10 ctm. are the ones that require thought, judgment and skill. In the pelvis with a high degree of contraction, conjugata vera between 6 and 8 ctm. where delivery per vias naturales can mostly take place only after craniotomy and where a natural birth is the exception—for such cases the question should be settled—Cesarean section at the onset of labor is the modus operandi. But for the cases with a moderate contraction, conjugata vera of 8-10 ctm., for these most frequent of all cases, a universal formula of treatment is yet to be found.

It is necessary to outline in a few words the development of endeavors that have been made to render management of labor in these cases successful and exact and special reference to Cesarean section has to be made.

Sectio Cesarea is an old operation; for centuries it almost always meant death to the mother. This in striking contrast with cases where parturient women unable to deliver themselves of their babies, cut themselves open in utter desperation—and lived! Dr. P. Harris (Philadelphia) collected years ago a number of such desperate deeds (*Amer. Journal of Obst.*, etc.), he also published a series of cases where pregnant women were ripped open by the horn of a bull or buffalo, delivered of the fetus—and lived! The failure of Sectio Cesarea in the hands of skilled operators was due to the fact that in all their cases the parturient woman had been examined and attempts at delivery had been previously made; in other words, these women had septic infection before Cesarean section was undertaken.

Even after the advent of antiseptic surgery, the results were not at once much improved; aside from other causes insufficient suture of the uterine wound was responsible for many deaths; the gaping of the wound allowed the septic contents of the uterus to escape into the abdominal cavity, even when infection at time of operation had not taken place.

To remove this source of infection Dr. Porro suggested and carried out removal, amputation of the uterus after Cesarean section. This suggestion was most successful, women lived again through Cesarean section and series of uninterrupted recoveries were reported.

But the mutilation of the women through Porro's operation brought about objections based on all sorts of reasons, moral, religious and otherwise; it is against the teachings of Judaic (Talmud) and Christian morals to cohabit with a woman who is physically unable to bear children (Dr. Schlemmer). The conscience of religious physicians and lay persons was aroused against Porro's operation.

Furthermore, this mutilation does not appeal to operators who wish to preserve the organs and restore their patients ad integrum. Sanger worked out a perfect technic of suturing the uterus, which was first successfully employed by Leopold; this somewhat complicated technic has since been much simplified and used with great success.

The fact that Sectio Cesarea could be safely performed with retention of the genital organs and their function, soon created a new indication, the relative indication for Cesarean section. This operation was now performed in cases where delivery per vias naturales could be safely effected for the mother but where the fate of the child was uncertain, or where the child had to be sacrificed—in other words, the operation was undertaken for the sake of the child.

In view of the fact that, however, not all the women survived the operation and in consideration that certainly in some cases delivery might have taken place spontaneously with the fetus alive—in view of this, accoucheurs were not fully satisfied with this operation on relative indication at the onset of labor.

As a striking instance of spontaneous delivery where Cesarean section was advised and planned, the following case is certainly interesting: In 1910 the German Chirurgical Society met in Berlin; Dührssen had announced that he would perform his new extraperitoneal Cesarean section, "Buddha's operation," on a woman with contracted pelvis and he had invited the visitors to the Congress to witness the operation, but the day before operation the woman delivered herself of a living child in a speedy, spontaneous labor.

* Read before the California Academy of Medicine, March 25th, 1912.

Other such cases have occurred and on the other hand in many instances Cesarean section has been performed where a natural birth with living child would have been the issue if left alone.

This uncertainty has induced accoucheurs to work out a more exact method and different endeavors have been made on this line. The end in view is to put labor in contracted pelvis on the same exact basis as labor in cases where the head has entered the pelvic inlet in normal pelvis; here under certain conditions and upon well defined indications, forceps is applied and labor terminted cito certe et jucunde for both parturient and fetus. The same exactness is sought in cases where the difficulty lies in contraction of the pelvis, mostly contraction of the pelvic inlet, it is proposed to wait and to see what nature can do; then if nature fails, the accoucheur should step in and deliver the woman of a living child cito certe, et jucunde.

The first step toward realization of this plan was made by Morisani, who re-introduced symphysiotomy into obstetric practice. But many injuries, with even resulting death of the mother, were observed and after the usual initial enthusiasm, symphysiotomy was considered a side-step.

The same experience was had with hebosteotomy pubiotomy after Gigli; the return to sectio Cesarea then followed; to avoid the usual cause of failure in sectio Cesarea, septic peritonitis, attempts had been made years ago to enter the uterine cavity without passing through the peritoneal cavity gastro-elythrotomy, practiced in a number of cases by American surgeons, revived as extraperitoneal sectio Cesarea by Frank and modified by others.

Can it now be said that the much desired simple formula for managing cases with moderately contracted pelves has been found? The formula—to wait and then, if necessary, to perform sectio Cesarea?

Sectio Cesarea on relative indication in this class of cases is undertaken solely for the sake of the child; there must not be the slightest danger for the mother in performing sectio Cesarea under these circumstances. What do we know in this matter? The reliable statistics of German university clinics show a mortality—low, 5%—but a mortality! We have seen and are still seeing published in America shorter and longer series of sectio Cesarea without death; but these reports do not tell the whole truth; they are deceiving; women die occasionally after sectio Cesarea in America.

Unfortunately for the truth, these cases of death are not published; if all fatal cases would be reported, the fallacy of the contention, that sectio Cesarea is a harmless operation, would be fully shown. Wherein lies the danger? In the fact that when labor is protracted the bacterial flora of the vagina becomes virulent and invades the cervical and uterine cavity. We have no means, neither clinical nor bacteriological, to determine the onset, degree or extent of the changed character of the vaginal flora.

Fortunately it will be possible for the accoucheur in most instances upon careful study and observation of the case and with due consideration of all circumstances to arrive at a definite conclusion after some hours of labor, whether the head will pass safely the pelvic inlet or not. If sectio Cesarea is thought of for certain reasons it should be performed soon, inside of 10 to 12 hours after beginning of actual labor. If a woman has been in labor for 12 hours and more, if the waterbag is ruptured for some time, if the vagina is hot and dry, if the amniotic fluid has become fetid, if there is fever with high pulse, if frequent examinations and attempts at delivery have been made: in these cases sectio Cesarea should not be done, unless extraordinary conditions exist; in cases of this sort the accoucheur must be fully conscious and aware that he takes chances with the life of the mother, fully justified at times.

Certainly in some cases this means sacrifice of the fetus. Quite sure that there is in this category of cases at times a conflict between life of the mother and life of the unborn child, and whenever this conflict arises, there cannot under ordinary circumstances be any doubt, that the life of the mother is more valuable than that of the unborn fetus.

It must not be forgotten that there are other ways to deliver, almost perfectly safe for the mother: forceps, craniotomy.

Dr. Baker Spalding demonstrated two uteri of women, who in the hands of some pseudo-obstetrician, died from laceration of the uterus after high forceps, and Dr. J. H. Barbat spoke very warmly against high forceps and craniotomy. But the demonstration and the words of these gentlemen are not a condemnation of high forceps and craniotomy, they are a plea for better teaching and training in midwifery and an exposition of deficiency in training and skill of those who undertook the performance of these difficult operations.

The application of a high forceps, the performance of craniotomy are not easy operations; they require skill, manual ability, obstetric tact. High forceps should never be used in contracted pelvis, when the head is entirely above the pelvic inlet; podalic version may here be indicated.

High forceps should be attempted with greatest care, without undue force, only when the head has either mostly or with a segment passed through the entrance of the pelvis. High forceps should only be used on strictest indication.

If then in a moderately contracted pelvis for one reason or another the right time for sectio Cesarea has passed, if the head has entered the pelvis more or less, if symptoms develop that demand termination of labor, I cannot conceive of any reason why forceps should not be applied in such a case. Frequently this is all that is required for a safe delivery of a living child. If the careful attempt with the forceps has proved futile, if the disproportion between pelvis and fetal head is too great to allow its passage, I cannot see any reason why craniotomy should not be performed, the fetus in these cases being either dead or dying. In extreme cases, if the condition of the mother forbids further delay, I say

craniotomy of the living child is permissible and certainly better obstetrics than brutal application of the forceps, followed by crushing the life out of the fetus and by severe, possibly fatal lacerations of the mother; better obstetrics than sectio Cesarea with death of the mother and possible death of the baby in a few days.

A point that is sometimes made against tedious delivery in cases of contracted pelvis and against the use of high forceps in particular, is the alleged observation of spastic paralysis, epilepsy, etc., in infants born under these circumstances, the so-called Little's disease. Dr. Leo Newmark has written about this matter and so far mostly psychiatrists and neurologists have treated this very interesting theme. In a correspondence that I had with Newmark I maintained that according to my own observations I could not accept those teachings. A short time ago a comprehensive treatise on the subject was made by Prof. Hannes from the great material of the Breslau Frauenklinik, Director Prof. Kustner (*Zeitschrift fur Gaburtshilfe,* etc., LXVIII, p. 689, etc.). Hannes draws the following conclusions (p. 707): "If we base the question, whether difficult and asphytic birth predisposes more than normal and spontaneous delivery to idiocy and anomalous psychic development, on histories of deliveries registered by the obstetrician without prejudice and bias—then we have emphatically to say, in contradiction to the statements of neurologists, that this predisposition does not exist."

Labor being composed of so many different factors in every case, each of which becomes quite important in cases of disproportion between head and pelvis, it is evident that we have no panacea for these cases, not even in sectio Cesarea, whether performed in the extraperitoneal way or in the so-called classical method; each case has to be studied and treated individually and since we are only mortals with all the shortcomings of the species, it is but natural that occasionally we commit an error of judgment (only fools and ignorants are free from committing these errors), and that the outcome of a case might have been different if we had acted otherwise.

I shall now report a few cases of labor in moderately contracted pelvis, seen in my practice in the last year or two.

Case I. Mrs. A., young woman, primipara, below medium height, slender build, pelvis contracted generally 1½-2 ctm. Conjugata vera estimated at 9½-10 ctm. At beginning of labor head movable at pelvis entrance; labor on time; progressed normally, slowly, cervix is dilated, the membranes ruptured, head entered pelvis.

After 24 hours of hard labor the head has mostly but not entirely passed through pelvis inlet, small fontanel deep and to the front. Parturient exhausted; distinct inertia uteri; labor is at a standstill; there is noticed a peculiar shape of the uterus, indicating somewhat the hour-glass constriction, fetal heart beats vary much, at times very high. Therefore Tarnier's forceps applied, baby delivered without difficulty, girl 8½ pounds, cries immediately; a very slight perineal laceration. Normal puerperium.

Case II. Mrs. U. Young woman, primipara, middle height, slender. Pelvis generally contracted, conjugata vera estimated 9 ctm. At beginning of labor the membranes ruptured and much amniotic fluid escapes; face presentation. Attempt made under deep narcosis to change the presentation of the head without success; attempt made to turn the child to the feet, it failed. To save the child, sectio Cesarea proposed. Dr. Topping saw the case and concurred. About 12 hours after onset of labor sectio Cesarea performed. Head difficult to dislodge, child asphyxiated; succeeded in saving it. Puerperium uninterrupted.

Case III. Mrs. C. Young woman, primipara, considerably under medium height. Conjugata vera estimated 9½ ctm. Head above pelvis inlet at beginning of labor. Gravida is gone about two weeks over her time, labor begins with rupture of membranes. Tedious labor extending over Monday (1 a. m.), Tuesday, Wednesday.

The cervix becomes dilated slowly during Tuesday head begins to be pressed into the pelvic inlet with the occiput in the lead and caput succedaneum forming. General condition of parturient and fetus good; chloroform given. In afternoon labor pains became less frequent, less powerful, distinct inertia uteri; parturient's temperature 101° F. Heart beats less loud and very frequent. Head has entered, but not entirely passed the inlet. Taenier's traction forceps applied, head follows without difficulty, is slowly drawn into pelvis and fetus delivered. Amniotic fluid much discolored. Baby's cord quickly clamped and cut, the heart beats at great intervals, it makes two spontaneous respirations after considerable effort at resuscitation, but I fail to revive the baby, female, 8¾ pounds, no perceptible injury.

Careful suture of laceration at cervix and of perineum. When just finished the woman stopped to breath and her heart ceased to beat. I at first did not realize what her condition was, careful examination showed her uterus well contracted, no hemorrhage, finally I realized that her condition of collapse was simply due to chloroform-syncope Puerperium normal.

Certainly no other procedure could be followed by a sane accoucheur than what was done here. I have found that the longer I wait in cases of this sort, the more the head is pressed into the pelvis, the better the chances are for the baby, but it is not always possible to have a living child.

A few months afterward the lady was pregnant again. When the time of expected confinement arrived, the gravida entered the German Hospital, some slight contractions were noticed; these were encouraged by the insertion of a bougie, and in a short time labor—a baby girl 7¾ pounds was born without difficulty.

Case IV. Mrs. H. Young woman, 1 para, of slender build and under medium height. Pelvis generally contracted, conjugata vera estimated 9½-10 ctm. A counterpart to Case I.

Head above pelvic inlet at beginning of labor; labor protracted from Friday night to Sunday evening. Owing to my absence from town another physician attended to her until Sunday noon when I saw the case. The cervix had become dilated, the membranes ruptured, but the baby was not born.

When I appeared on the scene there was great prostration; the parturient exhausted and the husband in a desperate mood seeing his beloved young wife suffer so much; the parturient's mother on the verge of a collapse. If I had proposed to perform Cesarean section it would have been accepted—anything to end their misery. I found parturient and fetus in excellent condition; the cervix fully dilated, the head just pressing on the pelvic inlet; there was no reason to interfere. A little chloroform was given and parturient was encouraged and assisted to bear down, with the result that the head entered the pelvis, appeared in the vulva. At that stage her own power gave

out, the power of the uterus was not sufficient to bring the head over the perineum, so forceps were applied to the head in pelvic exit and the fetus delivered certe, cite, et jucunde.

Discussion.

Dr. A. B. Spalding: I am sure that all here to-night are much interested in Dr. Kreutzmann's paper and his experience with the moderately contracted pelvis. He certainly has had much experience along this line, probably more than any of us. I agree heartily with Dr. Kreutzmann as to the rarity of the condition of absolute pelvic contraction in San Francisco and its surroundings. Eight or nine years ago I had a case and I performed Cesarean section, but since then I have not met with an absolutely contracted pelvis in this community. The moderately contracted pelvis in the hands of the general practitioner and in the hands of the specialist is two entirely different things. In this community there are a great number of Cesarean sections being done and I believe that in the next few years there will be reported before this Society or the County Medical Society cases of spontaneous rupture in multiparae, and when these patients lose their lives as the result of former needless Cesarean sections it will be because men are now doing Cesarean sections without just indications, doing them not only for contracted pelves but for other indications. I think like Dr. Kreutzmann that men in this city are doing Cesarean section too frequently, but that does not detract from my mind the fact that Cesarean section is needed in selected cases. Moreover, the general practitioner has no more business doing a high forceps than he has doing a Cesarean section. If a man cannot do Cesarean section he ought not to have the cases of pelvic contraction to handle. One point that has impressed me forcibly has been the remarkably low maternal mortality reported to me by local practioners. I know of only one case where the patient died and that was because of the bad treatment she receved before Cesarean section was attempted. A great deal of unnecessary damage had been done the patient by attempts at high forceps before Cesarean section was resorted to. That is the only case that has been brought to my attention where maternal death resulted immediately from Cesarean section. One of my students spoke to me of a case of moderately contracted pelvis and stated that the resident physician in one of our hospitals had performed Cesarean section but that the baby did not live; the woman became pregnant again and he again performed Cesarean section and again the baby died but the mother lived. There is not great danger if the patients are not infected, but there is danger that they may die in future pregnancies. I think that we do not study our patients during pregnancy enough. If we know that a patient has a moderately contracted pelvis we should watch the patient carefully and keep track of the size of the baby, because it is possible by abdominal measurements to keep track of the size of the child and we can induce labor and get a good-sized baby by these abdominal measurements in the later weeks of pregnancy. We lose sight of this point in cases of contracted pelvis. As for operation being done late in labor, of course if the patient is infected the mortality following Cesarean section is high. From pure exhaustion I do not think the mortality is increased if the patient has been handled with hands off. I do not agree with Dr. Kreutzmann that the mortality is so excessive from pure exhaustion on the part of the mother, but if the patient is mistreated with instruments, etc., the patient is much better off with craniotomy. I have performed seven Cesarean sections in a series of over 2000 confinements, some of them were in labor from 12 to 24 hours. None of the mothers died, but one of the babies died some tme after delivery; a misfortune that will come in any series of cases. Regarding the damage that is done a patient by high forceps operation it is not the loss of life that we fear so much as it is the damage that is done to the patient's health. I have operated twice for incontinence of urine in a case of this kind due not to fistula but to loss of sphincter control. The patient could not hold urine until after two operations had been performed. The patient would have preferred to die rather than to have to live in her invalid condition. Cesarean section would be her own choice in a future delivery. We all continue to see cases of chronic invalidism as the result of badly done high forceps operations. I was much interested recently in seeing the Cesarean section work in Berlin and Vienna. I saw Bumm do two so-called extra-peritoneal Cesarean sections. Neither one, however, was really an extra-peritoneal operation. In Vienna in six weeks I saw four. The extra-peritoneal operation is probably the most difficult operation in abdominal surgery and after them the patients do not always do nicely. I asked an assistant in Vienna what advice was given to the general practitioner and was told that the general practitioner should perform craniotomy. This is the advice the students receive. That probably is good advice for the general practitioner to have at the present time. Better advice is to not do anything. If a man is up against it and has to do something because he has overlooked the possibilities of induced premature labor, then craniotomy is the best thing in the long run for the community, but in these days where patients can be gotten into proper hands the general practitioner has no business doing anything at all, when it comes to performing high forceps or Cesarean section. Another point is the occasional contraction of the outlet as well as the contracted inlet. I did not believe that occurred in this community until I met with a case two years ago in which I overlooked a contracted outlet and put on forceps. The patient got a complete laceration and afterwards when I measured the pelvis properly I found there was not room for a baby to get out without a complete laceration. That point we are overlooking; we ought to think of the posterior sagital diameter of the outlet. What is being done a great deal in the Johns Hopkins Hospital and abroad is the pubiotomy operation. That apparently is not such a serious operation as it would seem. If I see indicated cases I certainly shall perform it in the future because I have watched these patients after pubiotomy and have seen them two weeks after the operation walk some steps across the ward and stand up to be examined, and there was not the severe damage one would expect.

Dr. A. J. Lartigau: With reference to the handling of cases of moderately contracted pelvis it has always seemed to me a most essential thing to study each case carefully as both speakers have emphasized; and you will have to study the same woman carefully each time she is pregnant because such pregnancy in the same woman will not necessarily be handled in exactly the same way. You will have to not only study the pelvic measurements carefully but will have to determine the relation of the size of the child's head to these pelvic measurements. That must necessarily vary from time to time. At one time Cesarean section may be the absolute indication and at another time it might be an extremely foolish thing to do. We have to carefully weigh the relation of the size of the head to the pelvic measurements and not only that but the position of the head at the inlet. I would like to refer particularly to the handling of infected cases, and this I do not think is a simple matter particularly in the extreme cases of moderately contracted pelves. Generally speaking my experience with forceps has been a good one; I have little to regret in having

used forceps and I have used them more extensively than other men would use them. I am generally opposed to Cesarean section in infected cases. I have in a few instances attempted the classical operation and have had excellent results, but I do not consider that good practice. The cases which Dr. Spalding mentioned which he saw in some of the European clinics I do not regard as necessarily infected cases. So far as the importance of carefully estimating the size of the head, I am in full accord with Dr. Spalding, but my experience has not convinced me that one can estimate it with any great degree of accuracy.

Dr. H. J. Kreutzmann: I cannot remember that I have seen in my practice in San Francisco any case of funnel-shaped pelvis. I say we ought not to perform Cesarean section in cases of moderately contracted pelvis after certain hours have passed. My experience is that even when examined very little, where the labor has been protracted, that it is almost impossible to avoid the importation of staphylococci into the vagina. The great danger is that most women who have died from Cesarean section died from peritonitis. In my paper I did not go into the subject of pubiotomy or symphisiotomy; I will not do these operations because it is always likely that the patient will be injured from them and I am afraid that I might have a suit for damages brought against me. As far as the induction of premature labor is concerned, I have on a former occasion stepped into the arena for induction of premature labor and I continue to use this procedure in suitable cases.

OPERATIVE AND POST-OPERATIVE TONSILLAR HEMORRHAGE.*

By W. S. FRANKLIN, M. D., San Francisco.

The essayist in presenting this paper does not attempt a digest of the literature on the control of operative and post-operative tonsillar hemorrhage but wishes to give an account of his operative experience with the enucleation of the tonsil and the means found successful in controlling the bleeding.

For the past six years my work in tonsillar surgery has been what may be called radical inasmuch as the tonsillotome has been discarded as well as slitting the lacunae, cauterization, and the use of the punch. In all cases removal of the entire tonsillar mass, including the intact capsule, was attempted.

Hemorrhage is a variable term and the great diversity of opinion regarding its frequency can be traced to the temperamental differences existing among operators. One may call ordinary bleeding that follows the severance of arteries hemorrhage, while another limits the use of this term to an exsanguinated patient. Cases which resist pressure sponges after five minutes' application will be considered as hemorrhage. In private practice it is not feasible, as a routine procedure, to ascertain the blood-clotting index and guard against the occasional hemophilia.

The necessary questions and painstaking investigation will so alarm the average parent that many necessary cases will be denied this beneficial surgical procedure. Unless some such information is volunteered I proceed without fear of hemophilia.

In seventeen cases treated with calcium by the referring physician, as a preliminary to the operation, I noticed no change in the rapidity of clotting.

As bleeding may differ according to the technic of individual operators, I will explain the essentials of my method. An anesthetist trained in tonsillar work is essential and this point I must emphasize as, occasionally, I have been guilty of allowing a new interne or the family physician to administer the anesthetic and have invariably regretted it. The narcosis must be deep in throat surgery as the pharyngeal reflexes seem among the last to be abolished.

In the beginning of this work I operated eleven cases with local anesthesia in my office. Out of the eleven cases five had marked bleeding and it was necessary to remove two of them to a hospital and administer an anesthetic to control the hemorrhage. Since then I have discarded cocain and adrenalin anesthesia and firmly believe that its use for this operation in one's office is not to the best interests of either the patient or surgeon.

I have had no experience with nerve blocking, the injection of urea, hydrate or quinine sulphate. The same objections, possibly less the toxicity would hold, as for cocain. If local anesthesia is indicated the operation should be performed within the operating room of a hospital.

One of the patients, an army officer thirty years old, felt no pain and held his throat perfectly during the operation but after twenty minutes, in an endeavor to stop the hemorrhage, his pharynx became so irritable that I could no longer work properly. This, I consider the main objection to local anesthesia, i. e., the inability of the patient to allow the necessary methods for control of possible hemorrhage and his constant effort to clear his throat.

For the past number of years I have used the mouth-gag of Dr. Sewall of San Francisco and have found it admirable for all cases from infants to adults. Certain precautions must be exercised in its use. The tongue depressor must ride the base of the tongue, pulling it forward so that the operator can at all times see the entire epiglottis. The anterior end of the tongue or lips must not be caught against the lower teeth. The anesthetist should elevate the handle, thereby pulling the entire lower jaw forward. The one objection I have found in its use in over six hundred cases is the marked stretching of the anterior pillars, which at times makes them as thin as parchment. In five cases, I have perforated the pillars unintentionally and my efforts to suture the small holes made the first three worse, so the fourth and fifth were not interfered with and healed the best. Such a perforation, while technically not a good result, is not in any sense a discomfit to the patient.

I use the Klaar electric head-light and find it extremely satisfactory as it does not become hot and allows binocular vision without straining the neck. The pillars are separated with a quasi-sharp, small, rounded knife which pulls rather than cuts the mucous membrane. I prefer to do my own sponging as the operator can more quickly and

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

effectively apply loose sponges with a long dressing forceps than an assistant and the trauma is less marked. The sponges are held in the lap. In this manner it is not necessary to remove the light from the patient's mouth.

The size of the wires used does not influence bleeding nor does the slowness or rapidity of severance alter it. The base of the tonsil is large and though the muscle is momentarily compressed, soon regains its shape through its own elasticity; hence the time consumed in detaching the mass is of no consequence. I use, preferably, a strong wire as it can more readily be pressed between the capsule without a tendency to cut into any rough depression.

After the removal of the tonsil a mounted sponge is pressed firmly into the cavity and held in place for two minutes by the watch. Upon its removal the parenchymatous oozing has ceased and if bleeding continues its source can readily be distinguished from one, two, or three points. Using a long, curved artery forceps, having its tips guarded with thin rubber tubing, the anterior pillar is clasped, pulled aside and held firmly by the nurse. This brings the entire operative field into view and is preferable to pillar retractors. The latter constantly slip owing to the mucous and blood present and the inability of the assistant seeing into the throat. The bleeding points are picked up with long, curved hemostats. Formerly I ligated those vessels which after a few moments continued to bleed following the release of the hemostat. This was difficult of accomplishment in small throats and I feel certain was the cause of after-hemorrhage in two cases. The tonsillar wound is an infected area which heals by granulation. Ligatures become buried in the granulating mass, and due to the variable bacteria constantly present in the throat become infected and break down. This is the only explanation I can give for the following case of late secondary hemorrhage.

C. D., a young girl, aged five years, was operated on Feb. 7th, 1910. The tonsils were large, ragged and unusually adherent to the pillars. The right tonsil showed no tendency to bleed. The left tonsil continued bleeding profusely from an artery in the center of the cavity, directly behind the anterior wall. It was picked up with a hemostat but continued to spurt after three successive applications of three or four minutes' duration. A catgut ligature was applied which controlled the hemorrhage. On the thirteenth day following operation the child, while playing, was suddenly taken with marked bleeding from the mouth. When I arrived one-half hour later the girl was in bed, very pale, and would not open her mouth, but clung to the iron bed railing. She was taken to a hospital, given ether, and I found marked oozing from the site of the previous ligature on the left side. The pillars were sewed with catgut and the child made an uneventful recovery.

A second case showed secondary hemorrhage on the third day. Here also ligatures had been used but evidently loosened or became buried in the graulative tissue. Following these cases I discarded ligating the bleeding vessels, which was a difficult procedure at best, and confined my efforts to sewing the pillars in uncontrollable cases. For this purpose I have a long, curved needle, use catgut and pass the suture from the upper portion of the posterior pillar to the anterior pillar. The bite is taken quite deep near the floor of the cavity. The suture is now picked up on the anterior pillar and the needle slipped back through the original whole and reinserted, without loosing the suture, at the lower end of the posterior pillar and again carried to the anterior one. Now the needle is freed from the suture and slipped back through the latter holes. This leaves a mattress suture which does not touch the free edges of the pillars.

The original method of using an interrupted stitch I have discarded as in a number of cases it sloughed out leaving a notch in the pillars.

Catgut is very poorly absorbed in the throat and should be removed when possible. Silk is not practicable, particularly in children. Ordinarily, the edema prevents its ready removal as does the inability of the patient to open his jaws sufficiently. Formerly, in a number of cases, I packed the cavity with a sponge and sewed the pillars over the sponge using the suture for retaining purposes only. I finally discarded this procedure, as the sponge becomes very adherent and is with the greatest difficulty removed. Tonsillar clamps are awkward, must have a string attached and require removal.

No patient should be permitted to leave the operating table until both cavities are dry. Every case of delayed primary or secondary hemorrhage I have encountered has given evidence, while on the operating table, of a tendency to bleed. At present I sew every case in which, after ten minutes from the enucleation, the bleeding has not been stopped. One must set some such time limit, otherwise a tremendous amount of time will be wasted.

For a period of six months I sewed the pillars in all cases, as a routine procedure. In a number the pillars separated, while in others they grew together. I can see no possible objection to this procedure. The deformity is no greater following sewing than due to the cicatricial contraction of the average healed case.

The tonsils get their blood supply from five vessels:

(1) Ascending pharyngeal branch.
(2) Ascending palatine branch of the facial.
(3) Tonsillar branch of the facial.
(4) Tonsillar branch of the Dorsalis Linguae.
(5) Descending palatine branch of the internal maxillary.

All of these come from the external carotid, hence, if sewing the pillars will not control a case it would be necessary to ligate the external carotid.

It is practically impossible to wound the internal or external carotid as the tonsil lies upon the pharyngeal and aponeurosis of the superior constrictor muscle. The ascending pharyngeal and external carotid lie outside the muscle and the internal carotid two to three centimeters deeper. A wire snare will hug the capsule closely if the anterior pillar and dome have been carefully loos-

ened. I have never seen a case where this became necessary.

Following hemorrhage it is well to put the patient upon a saline injection given by the Murphy drop method, and if the loss has been considerable the foot of the bed should be elevated, and morphine given sub-cutaneously.

I wish to emphasize the importance of treating tonsillar hemorrhage surgically, i. e., by mechanically compressing the bleeding vessels. The Mikulicz tonsil hemostat is an old-fashioned, barbarous instrument. When applied it is extremely uncomfortable to the patient and has a constant tendency to become dislodged. If held sufficiently tight to retain its position, it keeps the patient awake with saliva flowing from his mouth, pain over the wound and angle of the jaw and causes the sponge to adhere firmly to the cicatrizing surface.

It is not safe or good practice to rely upon chemical means for control of bleeding. It must be remembered that vaso-constrictors cause a secondary dilatation of the blood-vessels.

THROMBOSIS OF THE SIGMOID SINUS AND JUGULAR VEIN, FROM DIRECT TYMPANIC INFECTION OF THE JUGULAR BULB. A REPORT OF TWO CASES.*

By HILL HASTINGS, M. D., Los Angeles.

One, if not both, of these cases comes, I believe, under the classification of direct jugular bulb infection, from acute middle ear suppuration. Similar cases have been reported from time to time during the past few years, but not a sufficient number put on record to impress the general profession with the possibility of the rapid development of this dangerous complication.

Case 1. R. C., age 9, was brought to the Good Samaritan Hospital, Jan. 12, 1912, with the following history: Twelve days ago severe earache developed after a "cold in the head." Two days later a physician was called and found a temperature of 106°. There was no ear discharge, and no mastoid tenderness. The excessively high temperature was attributed at first to nervousness. The following day the family physician, Dr. Henry Prigge, was called and found a temperature of 105°. The child was restless, had moderate amount of earache and a very red, dry tongue. The child's appearance indicated the onset of one of the exanthematous diseases, likely scarlet fever. For the next week the child's temperature ran an irregular course, reaching as high as 106°; without any discharge and without much earache. On the eleventh day the temperature again went up to 106°. The child had developed some mastoid tenderness, and for two days slight ear discharge had been noticed. A confrere called to see the case in my absence, incised the drum membrane, and advised the parents of the child of the necessity of a mastoid operation.

The child was brought to the hospital the following day. When I saw the case, January the 12th, the temperature was only 99.8°. There had been no chill, or sweating; the tongue was dry and red; the general appearance was fairly good. There was no appreciable ear discharge; the drum membrane was dull red, sagging above, as was the adjacent postero-superior canal wall. The incision in the drum membrane, done the day previous, was closed by swelling of the membrane. The mastoid was moderately tender over the antrum and tip—not tender over the emissary vein. There was no thickening, and no tenderness along the jugular vein. Prior to this illness the child had never had any ear trouble.

Except for the well authenticated history of high and irregular temperature, simple mastoid involvement would have been the accepted diagnosis, calling for a simple mastoid operation.

A blood count and blood culture were at once made. The blood count proved 34,000 white cells, 84% polymorphonuclear cells. The afternoon of the same day the temperature again ran up to 105.8°, without a rigor. The diagnosis of septic thrombosis, likely dating back to the second day after the initial earache was considered reasonably certain. Immediate operation was advised, and the severity of the complication explained. The blood culture report was not, of course, obtainable until later. It proved negative.

Operative findings: A small amount of pus, subperiosteal, over the zygoma, escaped. The outer table of the mastoid was hard and no carious defect found. The mastoid cells, here and there, contained pus. The sinus bony covering was hard and no caries found. On chiseling away this bone the sigmoid sinus was found collapsed; its wall thickened and dull red. On opening the sinus a thrombus was removed extending from behind the knee down the descending limb of the sinus, as far as it could be uncovered. A curet was gently inserted toward the bulb, but the lower limit of the thrombus could not be reached from the mastoid cavity. The wound was packed, and the neck prepared. The jugular vein was uncovered and found collapsed above the entrance of the facial. The jugular was ligated about 2 inches below the facial and resected from this point upward as far as possible, along with two swollen lymphatic glands. A smear from the sinus thrombus showed streptococci. No thrombus in the neck portion of the jugular was found.

Examination of the eye was not made prior to operation. Several days later the fundus examination showed edema of both discs.

Jan. 13 (day after operation) the temperature dropped to 99.6°, up to 104° by 11 p. m.

Jan. 14, temperature from 99° to 105° (rectal).

Jan. 15, temperature from 98.4° to 105°.

Jan. 16, temperature from 98.6° to 105°.

General condition was fairly good.

Jan. 17 to Jan. 29, the temperature continued its septic course.

Jan. 29, the right sterno-clavicular joint became swollen and tender, with some pain and tenderness in the right shoulder. The septic sternal joint was opened with cocaine anesthesia and some pus evacuated. The blood count showed improvement—white cells, 9,800; polymorphonuclears 72%, mononuclears, small, 22%, large 6%.

Jan. 29 to Feb. 2 the temp. remained below 102° (rectal).

Feb. 2, temp. rose to 104° and a neck swelling occurred at lower end of incision; this was opened under ether and a tablespoonful of pus evacuated.

Feb. 4, temp. rose again to 104°, considerable pain and tenderness in the groin, and some edema of the foot and leg. Phlebitis of the femoral or saphenous vein was believed to have occurred. The sterno-clavicular joint was still discharging slightly, and there was still some pus draining from the neck wound.

Feb. 13, the edema of the leg has disappeared, and the pain and tenderness over the femoral likewise has passed away. The sterno-clavicular joint has healed.

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Feb. 16, patient discharged from the hospital in good condition; temperature still showed an evening rise to 100°, and some drainage of pus from the neck wound persists.

Mar. 10, the general condition has steadily improved. From time to time pus would accumulate in the neck wound, with moderate rise of temperature, and be discharged.

Mar. 23, a septic ligature (silk) was removed from the upper drainage opening.

Mar. 27, pus discharge persists. Patient taken to the hospital; neck wound opened wide and three septic silk ligatures removed. Convalescence thereafter uneventful.

The interesting points in this case were:

(1) The early appearance of septic temperature (2 days after the initial earache), without much evidence of ear or mastoid trouble; significant of rapid involvement of the sinus or jugular.

(2) The persistence of the general infection, after ligation of the jugular, due, I believe, to the escape of septic emboli prior to the operation.

(3) The occurrence of septic involvement of the sternoclavicular joint.

(4) A mild degree of phlebitis in the leg.

(5) The troublesome complications due to the infection of the ligatures on the jugular vein. This I attribute to the septic disintegration of the thrombus in the upper part of the jugular vein close to the bulb, from which the neck wound and the ligatures therein were infected. This occurred in another jugular case which I operated last year, in which recovery was delayed until the silk ligatures were removed. It seems to me that the practice of using silk instead of an absorbable ligature, as ten-day catgut, is to be avoided. Others have, to my knowledge, had similar trouble with silk ligatures on the jugular vein.

Case 2. E. B., age 8 years, was admitted to my service in the Children's Hospital, June 5, 1909, with the following history: Two weeks ago earache developed in the right ear. Almost immediately chills and high temperature occurred. Since then the child has had no appreciable ear discharge and no mastoid pain or tenderness, but chills and high fever have persisted. For a week the chills have occurred daily, followed by sweating. A week ago swelling in the neck appeared. An osteopath was called and has been massaging the neck daily. No significance was attached to the initial earache by either parent, or osteopath, in the absence of ear discharge or definite mastoid symptoms.

On entrance to the hospital the examination notes made are as follows: Child is fairly bright; somewhat complaining of the neck swelling. This swelling is below and not connected with the right mastoid. The mastoid shows no swelling, and no periosteal thickening can be made out. Its outline is distinctly felt. There is no definite mastoid tenderness. The ear canal contains a small amount of wax, but no pus. The drum membrane is dull white, not bulging; the landmarks are distinctly seen (the appearance suggested recent mild tympanic inflammation that had subsided). The hearing is good to watch, whisper and speech (with left ear closed by wet finger). The neck swelling is over the upper part of the jugular; the mastoid tip is clearly felt above the swelling. The swelling is tender to the touch, feels like a bunch of swollen glands, no one of which is distinctly isolated. Below the swelling, along the course of the jugular, no cord-like thickening could be made out, although it was noted that the jugular was questionably palpable. The temperature since coming to the hospital had gone up to 106°. The abdomen is distended and somewhat tender. There is no cough and no chest symptoms.

While the swelling, and the high and irregular temperature immediately following severe earache, pointed to a diagnosis of jugular thrombosis, such a diagnosis was by no means considered positive in view of the absence of mastoid pain or tenderness and the positively good appearance of the tympanic cavity. The possibility of the presence of pus infection elsewhere (e. g., in the abdomen) was considered. Dr. W. W. Richardson, the attending general surgeon, and Dr. P. V. K. Johnson, the attending pediatrist, of the hospital were called in consultation. In the meantime the drum membrane was incised. The note made at the time is: "Mt. incised from bottom to top, parchment-like to the feel of the knife; no pus and but slight bleeding." A blood count, done the next day, proved normal (Dr. C. C. Warden). Dr. Richardson reported the abdomen as not a factor in the case and believed that jugular thrombosis existed. (After proving by incision of the drum membrane that the tympanic cavity was at the time free of pus, I was beginning to doubt the diagnosis of thrombosis made on first seeing the patient.) Dr. Johnson found the chest normal. The urine was normal. Operative measures were delayed partly in order to study the case and partly because the temperature had dropped after a purge. No chill and no fever above 101° had occurred for 36 hours. June 8th, a chill and rapid rise of temperature occurred; operation determined on.

It was concluded best to proceed at once to uncover the jugular and if thrombosis was proved, to ligate the jugular before opening the mastoid and sigmoid sinus.

First stage: Jugular exposure, ligation and resection by Dr. Richardson. The jugular was exposed by two transverse neck incisions, the first high up over the swelling, the second low down about on a level with the omo-hyoid. (This was done by Dr. Richardson with the idea expressed, that the jugular could be as easily removed through these incisions as through the usual incision along the course of the jugular, and thereby an unsightly scar could be avoided.) Through the first incision an enlarged gland was found and removed over the thickened, purplish red, and the vein thrombosed. The vein was isolated through the lower incision working behind and under the S. C. M. muscle, and was found thickened all the way down to the union with the sub-clavian. The vein was ligated at this point and resected upward to the angle of the jaw. The vein contained small clot (specimen saved). The common sheath was markedly involved, purplish red. After resecting the jugular to this extent the neck incisions were partially closed while the mastoid operation was in progress.

Second stage: Mastoid and sigmoid sinus ablation (Dr. Hastings). The mastoid findings were practically negative until the bone covering of the sinus was removed. The mastoid cells were congested, but no pus or softened bone found. The antrum did not contain either pus or granulations, and no swollen muco-periosteum. On removing the bony wall of the sinus over the lower end of the descending limb, fluid pus welled up. The sinus wall was uncovered from behind the knee downward as far as possible towards the bulb. The wall was thickened. Below where the pus escaped it was purplish red and sodden, but unfortunately, in cleaning out the pus and granulations, a careful search was not made to determine the actual ulceration of the wall. The sinus wall was incised throughout the exposure and a dark, purplish clot was evacuated. The external wall of the sinus was cut away. Behind the knee the curet was introduced into the transverse part of the sinus towards the torcula, and the clot in this end washed out by the free bleeding that resulted. A small

drainage wick of gauze was introduced into the lower end of sinus towards the bulb; the mastoid cavity packed as usual.

June 14—Condition good. Maximum temperature 99.6°. Mastoid clean. Drum membrane practically normal; watch ½ inch; conversation 14 feet; neck incision almost healed.

August 14—Recovered.

September 10—Returns with small abscess under mastoid scar; a small sequestrum of bone removed.

October 10—Recovery complete. Neck scars are only thin lines.

The interesting points in this case were:

(1) The rapid development of septic symptoms—chills and high irregular fever, following the initial earache, which we attributed to direct infection of the jugular bulb from the middle ear.

(2) The evanescent character of the middle-ear inflammation, which had entirely subsided when we first saw the case two weeks from the onset of ear symptoms.

(3) The absence of all mastoid signs or symptoms, and the unusual operative findings indicating that the mastoid was not affected.

(4) The finding of free pus in the lower end of the sinus groove deep down near the bulb. This we decided was due to septic disintegration of the bulbar clot, and that this pus, confined as it was, gave rise to the septic symptoms.

(5) The absence of any general septic complications. This we attributed to the fact that the lower jugular was sealed by a clot that had not broken up, prior to ligation. The same was true of the upper posterior part of the sigmoid sinus.

Discussion.

Dr. H. B. Graham, San Francisco: The last case reported in Dr. Hastings' paper was very interesting to me. In the first place the membrane was intact, the process was a rapid process and those two things do not conform with our usual run of cases. Infections by the encapsulated bacteria have a tendency to leave the drum membrane intact. I have seen cases of encapsulated bacteria infections that have lasted from 6 weeks to 8 months and there is a case on record of a so-called primary mastoid where the process lasted over a year. It is not very frequent but cases of serious mastoid involvement do occur in two weeks' time. Streptococcus albus and aurius are as rapid as this in children, but as a rule there is a perforation of the drum and a discharge of the pus from the canal. In pneumococcus this is not necessary. We must recognize the fact that when we have these rapidly developing cases they must come to operation only or the cases will be lost. Bacteriology of the middle ear infections has gone rapidly ahead in the last 5 or 6 years; the most important step that has been made has been the discovery of the fact that we may have a rapid development of intra-cranial complications in middle ear infections, mostly due to encapsulated bacteria whether the drum is perforated or not.

Dr. Cullen F. Welty, San Francisco: In the first place, Dr. Hastings is to be congratulated that his cases recovered. When this first case was operated I am inclined to think the patient was suffering from a general septicemia, rather than that infection which results from a sinus thrombosis, because of the numberless abscesses that were opened. It demonstrates beyond a question of doubt, the numberless serious complications that follow delayed operation on the sinus, while should you open a healthy sinus, no harm would be done so long as your work is surgically clean. In the second case, child having a temperature of 105° or 106° on two or three successive days with pain in the ear, regardless of the amount of discharge, should have been operated before he was. High temperature and nothing to account for it other than a suppuration of the ear a few days prior, would doubly justify one in an operative procedure. The same surgical principles should be applied here that are used elsewhere in surgery—when in doubt, operate. This watching for classical symptoms has cost many lives. Is it not better to operate when in doubt than sacrifice the life of a single individual? You must always carry in mind that an operation of itself is not serious—but it becomes serious after your classical symptoms arise. In 250 mastoid operations, I have had but three cases of sinus thrombosis and they were thrombosed before the ear was operated. I think that speaks for something. I say to you all, operate these cases early, operate at the first suggestion of things going wrong and you avoid serious complications.

Dr. W. E. Briggs, Sacramento: I remember a case of sinus infection in which I was not able to trace the source of infection; at the time I saw the patient he had no evidence of disease of the middle ear and had no mastoid complications that could be observed externally. He had had hardly any toxemia symptoms and as to the temperature the history was obscure. I operated and found very extensive deep mastoid trouble and an extensive sinus infection; this must have been about 18 years ago. At that time I did not know as much about sinus infection as I do now and I did not do the operation that should have been done and the disease went on and death followed. Had I known from the history the condition which the man's middle ear had gone through, of course, things would have been cleared up earlier. The patient denied that he had any ear symptoms. Undoubtedly the infection had passed in through the middle ear and these cases I think are to-day very much better understood and naturally better treated. I cannot agree with Dr. Welty that we should operate the first time we find the patients in these conditions are running a high temperature. We find a large percentage of cases of middle ear suppuration in which the temperature is very high, subside promptly as free drainage is established from the middle ear.

Dr. Hill Hastings, Los Angeles: The long period of development in these cases I think is sometimes well worth considering. In 1905 I reported at the meeting of the A. M. A., two cases of sinus thrombosis which I thought ought to be put on record for the sake of informing the general profession of the confusion in diagnosis that exists in some of the delayed cases. One was a patient treated in my clinic—an ear discharge of three or four months duration, slight in quantity, without mastoid symptoms or signs, except some headache. He complained of having had chills and fever since coming from Texas and claimed that malaria organism had been found in the blood. Dr. Stanley Black examined the blood for us and said there was no malaria organism. His general symptoms were mostly those of a run-down condition. Mastoid tenderness of slight amount appeared, and operation on the mastoid showed an involvment of the lateral sinus which was thrombosed to the extent of about one-half inch. The second case was a patient seriously ill for four or five weeks with typhoid fever. About the sixth week fever which had been dropping began to rise and run a septic course. Attention was then given to the ear from which there had been a painless discharge. The mastoid was somewhat tender, but on account of the mental dullness of the patient, this tenderness had not been elicited. Operation disclosed a badly diseased mastoid. Sinus and jugular

thrombosed. Patient died a week after the resection of the jugular. Dr. Graham spoke of pneumococcus infection. When I saw this second case I suspected a pneumococcus infection, but it turned out to be a streptococcus. I have found that frequently streptococcus is mistaken for pneumococcus by the bacteriologist. We should get our bacteriologists to appreciate the differentiation between pneumococcus and streptococcus, especially the streptococcus capsulatus mucosus.

SOME OPINIONS CONCERNING TONSIL SURGERY.*

By C. C. STEPHENSON, M. D., Los Angeles.

It is not my intention to discuss this question from a strictly scientific viewpoint, neither do I intend persecuting you with a "text book paper," but after a long experience in doing eye, ear, nose and throat work, I have some opinions concerning tonsil surgery which I believe to be well founded, and so firmly convinced am I of the correctness of these opinions, that I do not hesitate in presenting them to this Society as my convictions, without adding thereto, or subtracting therefrom. (And this is my only excuse for afflicting you with my presumptions.)

We all have our notions about the different discoveries connected with the practice of medicine and each is entitled to his or her opinion in proportion to having tried them out. I mean by having tried them out that it has been done thoroughly, and a conclusion not reached until one is satisfied that every detail that has the least connection with same, or bearing either directly or indirectly, has been carried out. Then one is entitled to arrive at conclusions and form opinions according to results obtained, without bias or prejudice.

I will of necessity have to say something concerning the operation for the complete removal of the faucial tonsil, but only mention the technic in a general way, and as this paper will consider the enucleation of the tonsil to the exclusion of all other tonsil surgery, this will be meant throughout the entire discussion of the subject under consideration. My first experience with the tonsilotome disgusted me with negative results, or I perhaps had better say, imperfect results. I soon laid this instrument aside forever. A search through the pages of many instrument catalogues for an improvement or substitute failed to show anything satisfactory. For a time I used a Skeenes one-half curved uterine scissors, with a Wright's nasal dressing forcep for seizing, which proved to do better work than the tonsilotome. I had Meyrowitz, of New York, to make a scissors and seizing forcep which I liked very much, until the snare made its appearance, and then I did the ecrasement operation. When the knife came on the stage seeking favors, I then began using this instrument to the exclusion of all others, and at the present writing I am still an advocate of the knife, yet I feel that the Sluder operation has many advantages.

Briefly stated, I endeavor to enucleate without a break in the capsule. This I frequently can do, but in some cases I am not so successful and either cut through the capsule, or do not quite reach it; yet I will say that this does not happen often. I remove the right tonsil first and thus my field of operation for the left is unobscured by bleeding, as my patient lies with right side of face downward. After seizing the tonsil firmly with a fixation seizing forcep, I use a Pierce pillar knife to separate the adhesions, being careful to avoid cutting the superior constrictor muscle of the pharynx. The cutting is carried all around, freeing the gland from lower border of the lower lobe up to the supratonsillar fossa. Both pillars are freed and a blunt dissector is carried all around, and the tonsil is pulled forward enough to draw it well out into the throat, and is then cut off with a right tonsil knife. Hemorrhage is controlled before any effort is made to begin the removal of the left gland. This I do by saturating a sponge with Ochner's solution, which is composed of acetanilid, alcohol and water, and placing it between the pillars and using firm pressure with my forefinger, and just here I will say that I have never as yet seen any tonsil hemostat that I consider so effective and satisfactory as my finger in the control of the immediate bleeding following an enucleation of a tonsil.

So much for these few words of operative explanation. Now, the opinions that I entertain I will present with as much brevity as will be consistent with a clear understanding of what I wish to say. I rather suspect, however, that these opinions may be at variance with those of some who are present with us to-day. If your views do not coincide with mine, kindly accord me the same rights of belief as those you entertain. On the other hand, if you endorse what I say—or a portion of this paper—will thank you for an expression, which I trust that you will give with the same frankness that you would otherwise use in a criticism.

I believe that a tonsillectomy is as severe, and should be classed in point of gravity, the same as an appendectomy. With this view in mind, I shall deal with my questions as being of equal importance as those of appendectomy, and will endeavor to present my arguments as concisely as possible.

First: All hypertrophied tonsils without lesion or grave complications should be removed.

Second: All tuberculous tonsils with lesions should be treated medically and never surgically.

Third: All tonsillectomies should be performed under general anesthesia, unless the condition of the patient is such that a general anesthetic would be dangerous.

Fourth: All tonsillectomies should be hospital cases—i. e., the operation should be performed in a hospital.

Fifth: All tonsillectomies should be followed by the passage of an adenoid curette.

Sixth: All curettages following a tonsillectomy should be followed by the passage of the finger.

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

Seventh. The hot wire ecraseur should never be used.

Now, I have made seven declarations which I grant are somewhat extreme, but let us investigate the grounds upon which I shall build up a defense, and see if they are reasonably sound. In the beginning of my consideration of this subject, I acted on a saying of Solomon in the book of Proverbs: "In the multitude of councillors there is safety." So I wrote letters to quite a number of the leading men in their respective fields of work, and requested them to do me the kindness to answer the questions propounded, with permission to quote their replies in my paper. In these letters I stated that I desired that they be answered from the viewpoint of the surgeon, internist, pathologist, physiologist, pediatrist and neurologist; that is, I wanted their opinions from their experiences in their several differing and individual branches. (I enclosed a stamp for reply, but some did not show the courtesy that customary usage demands; so I regret that I am unable to give their replies.) I shall not attempt to discuss the replies that I received, as no doubt but few, if any, are in attendance, and I would not be so unfair as to take advantage of their absence by entering into a consideration of their letters. I only asked permission to quote their views in my paper. These letters I will read to you later, just as received, and leave their ideas for you to consider and digest.

First. Why do I say that all hypertrophied tonsils without lesion or grave complication should be removed? Hypertrophy as defined by Dorland, is the "morbid enlargement or overgrowth of an organ or part." Please note the qualifying adjective, "morbid." Therefore the acceptance of this definition would of itself be a justification for the advocating of enucleation. If a tonsil is normal, it is not hypertrophied. If it is hypertrophied, it is morbid, or diseased. Disease is any variation from the normal standard, and is a condition characterized by the occurrence of definite phenomena and constituting a recognized type of abnormality. Therefore in the hypertrophy of the faucial tonsil, there is a diseased condition which must be dealt with; the question then is, how shall we deal with it? To be sure, if a general diseased condition is present, carrying with it a hopeless prognosis, and there is a hypertrophied tonsil as a characteristic; such as the enlarged tonsils in leukemias, or in the hemophyliacs; or of the tuberculous, where the tonsils are ulcerating; I wish it to be understood that I do not mean that I include these types. I mean to deal with that class of hypertrophied tonsils where the enucleation promises to cure, and prevent future disturbances, and not those where an operation would apparently precipitate a fatal termination in an already doomed individual.

Removal then is curative and prophylactic. It is curative in that a diseased gland is disposed of by removal, and drainage of the debris of the mouth with infecting bacteria that might be present has been prevented from discharging polluting material into the chain of cervical lymphatics and bronchial glands, and lastly poisoning the blood stream with all kinds of infecting material. The tonsil as a portal of infection is therefore a menace no longer after enucleation. It is prophylactic in that it insures as well as assures against the likely train of troubles that a hypertrophied tonsil always promises.

Who will say that a hypertrophied tonsil that is at the present time quiescent, will not in the future hold in its crypts sufficient tubercle bacilli, Klebs-Leffler, or other bacteria to overwhelm the unfortunate possessor of these glands to intoxication? There is not a practitioner within the sound of my voice who will not admit the risk of provoking disastrous results by thus courting such danger. If you hold out to such a one a future free from all calamity, to my mind you are assuming a responsibility that you are not justified in doing. In advocating the enucleation, you are on the safest side, and you shift the responsibility to the patient. Then you cannot be blamed for anything that the future may develop as a result from these breeders of trouble.

November, 1910, I enucleated a tuberculous tonsil from one of the leading practitioners of Los Angeles, and no longer than February this year I removed the right tonsil from a Los Angeles contractor, who is 58 years old. This tonsil was enormously hypertrophied, and he gave a history of repeated attacks of recurrent tonsillitis with a decided impairment of his hearing on that side. The other tonsil was removed years ago with no subsequent annoyances following. The tuberculous case recovered rapidly from the operation, but went down with a general tuberculosis shortly afterward. The tonsils were filled with numberless tubercle bacilli. Suppose that the tubercle bacilli in the tonsils had been disseminated, would not this case have been overwhelmed? Would any physician feel satisfied in recalling that he refused to interfere in these two cases years ago had they presented themselves for advice? I am happy to say that the tuberculous case has entirely recovered. Such cases are familiar to all of us. So long as the house does not burn, the insurance money is not needed. One might be said to be applying for insurance when seeking advice concerning hypertrophied tonsils. Your decision then should be only for removal or insurance. Dangerous possibilities from these breeders of trouble, as I choose to call hypertrophied tonsils, are innumerable, whereas with proper enucleation there is safety from impending probabilities. But why dwell on this? Every man engaged in doing throat work knows that the danger comes from the live tonsil and not from the one that is in a preserving fluid. I might go through the catalogue of possible troubles arising from hypertrophied tonsils before enucleation, but none after.

Second. It is wholly unnecessary for me to discuss the enucleation of tuberculous tonsils, as the most mediocre practitioner understands or should understand the dangers of infecting a cut surface; and no trained physician would undertake to remove a tubercular tonsil in an ulcerating condition, but same should be treated medically.

Third. I say that all tonsillectomies should be performed under general anesthesia, unless the condition of the patient is such that a general anesthetic would be dangerous. Why should an operation be performed under general anesthesia? First of all, to have complete control of the patient, so that the work can be done thoroughly. Some of you may contend that local anesthesia will act just as well. Is it not as safe to use general anesthesia as cocaine, which absorbed and carried into the general blood stream may produce cocaine intoxication? Aside from this danger, the shock to the nervous system under local anesthesia is a thing with which we have to reckon. Three months ago I operated a woman in my office who has nerves of steel. Ether and cocaine were explained to her fully and she chose the latter. The shock to her nervous system confined her to bed for ten days. In the past this woman had had four or five operations under general anesthesia, none of which were followed by a nervous breakdown. To my mind then a general anesthetic is much to be preferred.

Fourth. All tonsillectomies should be hospital cases, that is, the operations should be performed in the hospital. In making this statement I realize that I will encounter much opposition, as no doubt many of the gentlemen present perform this operation either in their office or at the residence of the patient; in doing this, to my mind, they either sacrifice a few dollars or convenience or safety of the patient. The need of the hospital is very apparent in cases that result unfavorably where we have bleeders or trouble following a general anesthetic. Who is to say this case will or will not bleed? Who will say this case will result disastrously from an administration of an anesthetic, or will be perfectly safe? For these reasons alone I insist that all these cases should be hospital cases, for when we need a tank of oxygen, we need it. In other words, when hospital facilities are required there can be no delay.

Fifth. In discussing fifth, one cannot be positive as to whether there is a small amount of adenoid tissue present or not, as in some cases a small amount is sufficient to occlude the post nasal space. I am not discussing those cases of adenoids where all the symptoms are plain enough to be recognized without difficulty, therefore one can never make a mistake in passing the curette after all tonsillectomies, as it does no harm, and to my mind the operation is incomplete without the post nasal space being cleared of any tissue that might be there.

Sixth. There is very little to be said in reference to the 6th proposition. Following the passage of the curette the finger should be passed in the post nasal space, as in some cases fibrous bands of adhesions will radiate from the cushion of the eustachian tube and become attached to the posterior pharyngeal wall or to Rosenmuller's fossa. In passing the finger we break down these fibrous bands that bind the cushion of the eustachian tube which prevents its mobility.

Seventh. There is really nothing to be said in discussion of the 7th declaration, as no one I know of to-day uses the hot wire ecraseur. The only objection to the use of the hot wire is the cicatrix following, which is really more annoying to the patient than the tonsils removed by it. I have said nothing concerning the probable effects on the voice following a tonsillectomy for the simple reason that it is more of a bugaboo than a reality. In all my experience I have never had a case that was followed by even the slightest change in a vocal tone.

I now have the pleasure of presenting to you the letters which I have received on this question, which I will read to you verbatim.

Discussion.

Dr. Kaspar Pischel, San Francisco: I would like to ask Dr. Stephenson what he considers a normal tonsil. As it is probable that the tonsil has some function I have only removed the diseased tonsil. While in children a general anesthetic is necessary, in grown people I prefer local anesthesia, thus avoiding the additional danger of general anesthesia. I apply cocain on the surface but inject alypine which is so much less poisonous; the patients have always assured me that they did not suffer any pain and I never had any difficulty in stopping the bleeding. After loosening the tonsil all around I cut the stump with a hot snare, which causes less hemorrhage than the cold snare.

Dr. Franklin's method of suturing I consider a good one; I suture in every case, thus avoiding hemorrhages and diminishing the field of infection.

Dr. Cullen F. Welty, San Francisco: I have convictions as well and will start with my indications for tonsillectomy: 1. All cases of hypertrophied tonsils. 2. Recurrent acute inflammation of tonsil. 3. Chronic inflammation of tonsil. 4. Peritonsillar abscess. 5. Acute otitis when not associated with an infectious disease. 6. When hearing is impaired due to obstruction of the Eustachian tube; other things to be done as well. 7. Inflammation of the cervical glands. 8. In cases of rheumatism, especially when associated with sore throat. 9. In recurrent exacerbation of heart lesions, chorea, etc. 10. In cases that have recovered from lung tuberculosis, as the chances are largely in favor of tubercle bacilli being present in tonsil to predispose to another attack. 11. In cases that are under weight, otherwise healthy; most of these cases have gained weight following tonsillar enucleation. 12. Cheese deposits can be pressed from tonsils that otherwise look healthy. This comprises an incomplete list which can be multiplied very easily by more careful thought.

The whole hemorrhage proposition is based almost entirely upon your operative technic. A case should never leave the table oozing—all bleeding must be stopped by ligature, suturing of pillars, with or without sponge. Should you use a sponge, rub plenty of vaseline into it so that it will come away easily the following day and not a drop of blood will be lost. However, I prefer a curved needle with 00 catgut to be sure that my ligature will not slip. I can say to substantiate my statements that I have been called to the hospital for bleeding about three times in a series of one thousand cases, and some of these were due to faulty technic.

It is not just to liken a tonsillectomy to an appendix operation, as a tonsillectomy carries with it practically no responsibility as to the outcome of the case and appendix operations are sometimes followed by death; such cannot happen with a trained throat surgeon.

Dr. Louis C. Deane, San Francisco: If it were

the lot of a number of rhinologists to relate their various methods for tonsillectomy it would become a discussion marked by great differences in operative technic. The present operation came to us as a procedure of some surgical importance lifted from the scorn of the old tonsillectomy and so each man, without precedent and in his own way, proceeded to remove tonsils completely and in their capsule. It is these discussions that bring us to some uniform method, extracting therefrom the best and safest devices.

The question of anesthetics must first attract our attention. At first the hospital interne or family physician was called upon but of late the importance of this matter has compelled us to recognize the greater safety and facility of operating when a trained and experienced anesthetist is engaged.

As to the removal of tonsils under local anesthesia, I must say that my experience has not been so bad as those related by the readers of the last two papers. One factor of some importance to relieve the patient of pain when operating under local anesthesia is to avoid pulling upon the tonsil with the retracting forceps as this draws upon the deeper and unanesthetized tissues upon the neck and pain is produced there, extending to the shoulder.

I have used Dr. Sewall's mouth gag and it certainly gives a splendid view of the throat but the depressor being in the median line has to be so depressed that the pillars are drawn down upon and are far more liable to injury by cutting or tearing. I prefer an assistant who, using the tongue depressor of Welty's design, drawing the tongue away from the tonsil being operated upon; he also has a hand free for sponging, which is an assistance and saving of time where the operator attempts to do it himself. An important thing in tonsillar operations is not to damage the pillars; I use blunt dissectors in the form of the closed blades of a Holmes nasal scissors attempting to clip only such landmarks as the anterior and posterior carona above, the plica triangularis below and such tough adhesions as resist the blunt instrument. Great care should be exercised in separating the superior portion of the posterior pillar as great palatine deformities can follow careless manipulation in this region.

It is interesting to note the various opinions expressed here regarding the stitching of the pillars. Two of the gentlemen do so largely as a routine practice, while another never, except in extreme emergency. I am opposed to plugging the tonsillar fossa or stitching the pillars for the following reasons: First, you retard the growth of normal granulation tissue which is apt to leave some deformity. I have seen a marked difference in the two sides after I have plugged one side for hemorrhage. Secondly, you have wounded and possibly tear the delicate pillars. Thirdly, the plug comes away in two days, foul smelling, retaining in proximity to the wound any pathogenic material that might have been thrown off. Fourthly, in my experience of some six years with this operation I have only in a very few cases found plugging necessary to check a hemorrhage. I prefer the hemostat and suture. In the past three years I have painted the tonsillar fossa, following the removal of the tonsil, with nitrate of silver 10%; this acts as a styptic, antiseptic and escharotic.

Dr. Wm. F. Blake, San Francisco: There is a great diversity of opinion as to how tonsillar hemorrhage should be handled. There is also a great diversity of opinion as to whether the bleeding comes from the fossa or from the tonsil pillars and also whether it is arterial or venous in origin. I agree with Dr. Welty that any man who considers himself a nose and throat specialist should be able to remove tonsils properly. This much should be accepted as a matter of course.

I believe that after a tonsil has been properly removed with as little sacrifice as possible of the mucous membrane adjacent, that in the majority of cases the bleeding is venous in origin and the bleeding point most frequently lies in the very bottom of the fossa. Not infrequently we will cut in some places a little outside the capsule of the tonsil and in incidents like this where the vein is cut off it will bleed from both ends. To me, the proper method of handling hemorrhages of this nature is to take a pair of long, slim artery forceps and grasp the exact points of bleeding, and then with a small needle threaded with 00 catgut, pass a suture below the bleeding point and tie. This seems to me the most surgical procedure and results in less bruising of the tissues than excessive sponging.

Dr. C. G. Stivers, Los Angeles: My experience as a surgeon has led me to believe that our patients ought to demand and do demand the same right to general surgical principles being applied to their cases as in cases of appendicitis operations, and therefore if the operation can be done under an anesthetic which will minimize the injury to the tonsillar pillars, it should be used. I think these cases should be placed under general anesthesia. There are a great many San Francisco men here and it might be interesting to them to hear the general procedure that is in use with the Los Angeles surgeons. I have heard nothing in the discussion to-day in regard to operative measures where the finger dissection is used. Several men have mentioned the use of the knife for the purpose of freeing the tonsil. The general procedure of many of our surgeons in Los Angeles is to use the knife only to make the first incision at the junction of the tonsillar pillar and the capsule; that is made wide enough for the index finger to be inserted between the pillar and the tonsil, and the tonsil is freed in this way. It is mostly done with the finger. The knife is seldom used after the first incision.

Dr. Harrington B. Graham, San Francisco: I take issue with Dr. Stephenson with regard to a remark he made about the removal of tonsils that are tuberculous. I think that where there is no doubt about there being tuberculous tissues present that we are much better off if we remove it for we will get better healing of the surrounding parts. In regard to anesthesia, I would like to call your attention to a new anesthetic that is being used in New York City for nasal and tonsillar work. I have used it in a number of instances with marked success. It lasts for three days and means a great deal for the comfort of the patient and it is a thing well worth trying. I refer to urea and aninine hydrochlorid ¼% solution. Another method of anesthesia I have used satisfactorily is the blocking the nerve; by this means I have had in several instances complete anesthesia lasting for 24 hours. In Cooper College we are compelled to use local anesthesia at times. There we have had no severe tonsillar hemorrhages and we do from five to a dozen enucleations per week. Whether this is due to the method of enucleation used there or to the preparation beforehand I am not prepared to say.

Regarding Dr. Sewall's mouth gag, that has been a great success and only requires a little study and intelligence; no instrument is fool proof. With this gag there are some difficulties and if the anesthetist holds the gag he will have to learn those difficulties and learn to overcome them.

Dr. E. W. Alexander, San Francisco: I wish to warn against tonsillectomies, or at least advise caution, in cases with enlarged thyroids and evidence of hypertrophy or diseases of the thymus; also where acidosis is present. Such cases frequently have hypertrophied tonsils and lymphatics and take the anesthetic very poorly.

Post operative hemorrhage is almost always due

to sloughs. These are due to incomplete removal of tonsils or to devitalized tissue. In controlling the hemorrhage I have found the methods advocated by Dr. Blake thoroughly and uniformly satisfactory. If the exact bleeding point is picked up, and the hemostat allowed to remain on until the opposite tonsil is removed, it will be found that the bleeding is controlled in the majority of cases; if not, a catgut ligature will be perfectly safe. I think the reason for Dr. Franklin's late hemorrhage might have been that he included more tissue than was necessary in his ligature, resulting in a slough.

Dr. Geo. W. McCoy, Los Angeles: I find the chief objection to the removal of tonsils in the adult under local anesthesia is the pain, because of which I use general anesthesia much more frequently. Hemorrhage gives little trouble. By placing the patient on the edge of the table with mouth lower than throat the field keeps clear enough for continual procedure. In private cases after seeing the bleeding stopped on the table, I examine the throat after the patient has been taken to bed before I leave the hospital, and give instructions to the nurse as to the symptoms of hemorrhage.

Dr. C. C. Stephenson, Los Angeles: Answering Dr. Pischel's question I will say that a normal tonsil is one that presents no abnormal phenomena, and that the purpose of the tonsil is one of defensive action, but when it is hypertrophied that defensive action is destroyed. Regarding the question of the responsibility of the nurse, I always give the nurse on these tonsil cases sufficient instructions to properly attend the patients. Nitrate of silver I never use, because it coagulates the albumin and builds a wall, making it possible for the working of pathogenic bacteria from behind this wall. I have never used my finger to shell out a tonsil but one time, and if the young lady patient forgives me I will never do so again.

Dr. W. S. Franklin, San Francisco: Regarding the remarks of Dr. Pischel about general anesthesia I will say in tonsillar work he will sooner or later come across a case which will necessitate a forced hurry to the hospital, the giving of a general anesthetic and tying the vessels. If one has had the experience of seeing the patient bleed and bleed, profusely from the mouth, spitting, hacking and coughing every minute and interfering with our efforts to stop the hemorrhage, he will admit that the sight is by no means a beautiful one. He will decide that general anesthesia is preferable to such a procedure.

Regarding the remarks made by Dr. Welty I cannot agree with him at all. He seems to have had better luck than almost any of us. The blood vessels have been separated and when you cut a tonsil transversely you are going into a certain part of the throat where you will get bleeding. In regard to the separation of the posterior pillar I do not do that for reasons of hemorrhage, but because it is not necessary technically. As to the question of using the sponge in the mouth; after a man has used the sponge often he will find that it will become adherent to the tissues when he tries to remove it the next day. In one case I left a sponge in the throat for 5 days because I could not remove it and when I did remove it the stench that came from it was terrible.

I believe that when local anesthesia is indicated these cases should be operated upon in the operating room of a hospital for I object to operating within an office where the facilities are not proper for treating a bad case.

Speaking of Dr. Sewall's mouth gag, it is a very satisfactory instrument only it is necessary that it be used properly. With this gag the tongue can be held most satisfactorily. When the tongue is held by an assistant it is never held consecutively for 2 minutes in the same place.

Regarding the use of nitrate of silver on the fossa, I do not believe in this procedure. Regarding the sewing of the pillars, this is a fine subject to speak upon theoretically. It would be very well not to sew the pillars if you got perfect results when you did not sew the pillars. In many cases the deformity is no greater after proper approximation of the pillars than it is when they have been allowed to granulate.

Dr. Blake is correct when he says that the bleeding points are as a rule at the bottom of the fossa. The method of separating the tonsils with the fingers is not an original one, it having been used by the ancient Romans, and to my mind the finger is not as accurate as an instrument. In regard to hemorrhage under local anesthesia, it is a fact that you cannot control it. I do not want you to think that every one of my cases bleed and that I never have cases that go smoothly and nicely. An important point in the prevention of post operative hemorrhage is to never allow a portion of the tonsil to remain. Post operative hemorrhage is due to the fact that the tonsillar wound is an infected wound and if it was not infected during the time of operation it has become infected from the bacteria that are constantly present in the throat.

REVIEW OF RECENT ITALIAN EYE LITERATURE.*

By VICTOR F. LUCCHETTI, M. D., San Francisco.

In reviewing the Italian eye literature of the last few months, I have avoided citing new and important cases, as well as statistics, but have confined myself to those articles which showed original investigation, and could, therefore, contribute new facts and theories to our ophthalmic literature.

MODIFICATION OF GUERIN'S OPERATION OF BLEPHAROPLASTY.

To the converging incisions which are proper to this operation, M. Roselli, of Rome, adds two oblique diverging incisions to the former, starting from the point of their union. By a dissection of the flaps corresponding to the new incisions, and by the secondary suturing of these elevated flaps, Roselli has obtained a number of advantages for the definite restoration of the inferior lid.

THE CYCLOPIC IMAGE AND THE PLAIN MIRROR.

In the field of physics an article appears by Prof. Ovio, in which he offers a plausible explanation for the so-called cyclopic image.

In looking into a plain mirror from a distance of one meter, the following occurs: The image of the face appears double, one superimposed upon the other, showing the reflection of a large face with three eyes. If one continues to gaze for a short while into the mirror, the two extreme eyes of the vision will suddenly disappear, and an elongated image of the face with a single eye will remain; a veritable image of a cyclops. This

* Read before the Eye, Ear, Nose and Throat Section of the San Francisco County Medical Society, June 25, 1912.

phenomenon is due to a diplopia and to an abstraction of the images.

PERSPECTIVE AND VISUAL ACUITY.

The same author gives a very interesting account of a series of researches in regard to the perspective, and its relationship to visual acuity and reading with one eye, and with both eyes, and has made the following deductions:

That the size and form of the images may undergo considerable alteration as regards perspective. Changes in the size and form may be produced simultaneously, or isolated, but in different degrees. They are formed by the inclination of the plane of the object in relation to the plane of the image, and increase ordinarily as the angle of inclination increases; they vary accordingly as the object is more or less distant from the eye, and as it is in a frontal or lateral position. The letters also undergo changes of size, of the form as a whole, and of isolated position; their legibility becomes modified. When the inclination attains a certain degree, the visual acuity diminishes considerably, about one-half. In order to study the effects of perspective in reading, the author chose the simplest conditions (straight book, book on horizontal support at ordinary distances). The deformities which are considerable under these conditions are naturally exaggerated in the oblique positions.

By means of photographs, the author demonstrates all the deformities observed by him, and which diminishes the legibility of the optotypes, and of the text printed for ordinary reading purposes. During reading, physiological movements are continually being produced, which are considered favorable, inasmuch, as they impede the fatigue of prolonged fixation, but which at the time give rise to effects of perspective. The movements of accommodation which are continually going on during reading are equally favorable. The accommodation is rhythmical, but varies from one line to the other about one-half of a dioptrie. The effort of accommodation increases progressively toward the middle of the page, and diminishes afterwards. The changes in the size of the images under the influence of distance are also favorable from the point of view of fatigue of the retina. These variations may be one-tenth (book in hand), or one-third and one-half (book in horizontal plane). On the contrary, the variations of the angles of inclination are detrimental, especially in reading with both eyes. In the oblique positions, the normal accommodation is not always the same for both eyes, the difference being 0.10, and 0.36 of a dioptrie. There is always, therefore, in reading one image which is quite clear, and one which is not (Albini's plesiopia), because the diminution of the static refraction of the eye in its oblique position only partially compensates this difference. The difference in size between the images of the two eyes in the oblique positions may be from three to fourteen per hundred. Ovio recommends strongly larger letters, their better disposal in space, shorter lines, and books of smaller size in order to obviate some of the above mentioned errors.

PYOCYANASE.

M. Roselli applies this substance by instillation in purulent conjunctivitis in the new born, with a complete checking of the disease.

NON-TRANSMISSIBILITY OF THE COCCUS OF NEISSER.

Cechetto, of Parma, has demonstrated that the coccus of Neisser is non-transmissible to animals.

EMPIRICAL TREATMENT OF TRACHOMIA IN THE ABRUZZI.

Di Giuseppe, of Chieti, states that the peasants in this region rub the leaves of the nettle (ortica) on the conjunctiva. The action is probably like jequirity, only less violent.

ANGULAR CONJUNCTIVITIS CAUSED BY DIPLOBACILLUS OF MORAX-AXENFELD IN THE ETIOLOGY OF PTERYGIUM.

M. Gonella claims that conjunctivitis caused by the diplobacillus frequently predisposes to an hypertrophy of the pinguecula, and to the formation of pterygium and analogus forms. In this form of conjunctivitis, the bulbar conjunctiva participates in inflammation of the angular regions, and often one notes a band of tumified conjunctiva and hyperemia sufficient to produce an elevation at the level of the limbus. Occasionally one sees the pinguecula extend directly on the cornea. Other times in a more advanced stage of this process, you may distinguish a band of new tissue forming a pterygium-like growth and pointing in an oblique direction. This can be observed in the internal and external angles.

The cause of these pterygoids consists in the progress of these torpid marginal alterations so frequently seen in angular conjunctivitis. The bacteriological examination made by the author in all these cases of classical pterygium, has demonstrated in a majority of cases (seventeen out of twenty-two) the presence of the diplo-bacillus, even in those cases where a typical angular conjunctivitis did not exist.

CINEMATOGRAPHY AND NYSTAGMUS.

Pinaroli refers to a novel method of registering the movements of the eye in cases of nystagmus, and has obtained by means of examination of the positives taken at the rate of 676 per minute, the following:

1. The relation which the various positions of the eye bears to its three axes of rotation.

2. The number of these movements in a unit of time.

3. The rhythm, i. e., the more or less constancy as regards the time and position of the ocular oscillations.

4. The peculiarity of the movements in the various directions of the sight.

For these reasons, he thinks that cinematography will become an important factor in studying nystagmus, be it of whatsoever origin.

PATULOUS ANUS: ITS CLINICAL SIGNIFICANCE.

By ALFRED J. ZOBEL, M. D., San Francisco.

In a normal individual the anal canal is held closed tightly by the tonic contraction of its sphincter muscles. In certain individuals, however, we observe that when the buttocks are drawn apart there is more or less gaping of the anal orifice.

This condition of patulous anus results from an abnormal loss of tone in the sphincter muscles, which may be due either to a fault intrinsically within the muscle, or to some disturbance in its nerve supply. When purely muscular the cause may be a direct injury to the muscle; an infiltration by a malignant or a syphilitic growth; a participation in a general muscular weakness; or the presence of a foreign body in the rectum which prevents the muscle from completely contracting. When the nerve supply to the sphincters is at fault the causative lesion may be either central or peripheral.

Complete fecal incontinence does not necessarily follow when the anus becomes patulous. Some individuals, in whom the muscle alone is only slightly affected, have fairly good control for at least solid bowel movements. Others, with a patulous anus of still lesser degree, are able to retain not only solid and liquid but even gaseous stools.

In those whose muscular system has become greatly weakened by long protracted ill health the anal sphincters share in the general weakness, and the anus may become patulous. As a rule they do not suffer from fecal incontinence unless in the typhoid state, since by an effort of the will they are able to assist the external sphincter in performing its function, through augmenting its action by strongly contracting their glutei muscles and bringing them together.

In the aged the sphincters frequently become atonic. There being here a true paralysis of the muscles, incontinence of feces invariably follows.

When the proctoscope is used on the old and enfeebled the anus will frequently remain patulous for some little time after the tube is withdrawn. The mere introduction of the instrument often causes quite a relaxation of the sphincters, and this makes a high proctoscopic examination in elderly people a rather troublesome procedure, since the air which is employed to inflate the bowel immediately escapes backward along the sides of the tube.

A patulous condition of the anus, remaining for several days, or even longer, often follows an overly long retention of a rectal plug introduced as a dressing after operation.

According to Tuttle, after simple divulsion of the sphincter ani muscle its tonicity sometimes fails to become properly reestablished. He considers this is due in all likelihood to the presence of some form of nerve or spinal cord disease. Fecal incontinence is the result.

Following lacerated wounds of the sphincter muscles their power to contract becomes greatly impaired. Irregular, jagged, or diagonal incisions result in vicious union. A tearing of the sphincter ani muscle during labor, without any perineal laceration being evident, may end in permanent relaxation of the anal aperture. A case where there was an isolated rupture of the sphincter during labor was reported recently by Rosenfeld.

When there is an involvement of the sphincters by a malignant neoplasm, or by a syphilitic infiltration, the anus becomes at times markedly patulous. Such a condition was demonstrated in my service at the San Francisco Polyclinic. An otherwise rugged old man applied for relief from a condition which he had self-diagnosed as bleeding hemorrhoids, and for which, previous to coming to the clinic, he had been treated without any examination being made. Our examination showed a markedly patulous anus, together with the presence of a well-developed infiltrating cancerous growth low down in the rectum.

Other foreign bodies in the rectum, such as a large fecal impaction, or an intussusception of the bowel may also cause the anus to become patulous. In two cases of intussusception of the bowel in children which came under my observation, a relaxed anal opening was seen in each. Where there is a history of a child with diarrheal and blood-stained fecal movements, accompanied by severe abdominal pain, I immediately examine for a patulous anus, which I deem one of the characteristic symptoms of an intussusception low down in the bowel.

The constant and prolonged use of overly large rectal dilators and specula, often results in stretching and weakening the anal sphincters. In pederasts a patulous anus gives silent witness to their secret practices. A short time ago a boy of twelve years, bright, intelligent, and of good parentage, was referred to me for operation upon an ischio-rectal abscess. At examination there was noticed a patulous anus. My suspicions being aroused smears were made of the secretion from the anus and rectum, but they were reported as negative with reference to the presence of the gonococcus of Neisser. Questions to the lad, which were delicately put but pregnant with meaning, were cleverly parried, and I hesitated to state my suspicions to the anxious parents. During convalescence the boy's father, shocked and distressed, informed me that he had just made the discovery that his child had been the victim of an older lad; and thus my suspicions were verified. My suspicion in this instance was due to the fact that in all the cases of gonorrhea of the rectum in males that have come under my observation, this condition of patulous anus was present. As a result, whenever an examination of a male shows a patulous anus without any lesion being discovered sufficient to account for the relaxation of the muscle, the patient is always questioned as to when he acted the part of a passive pederast. Notwithstanding strenuous and indignant denials at first our presumptive diagnosis is usually verified by the patient's confession later on.

During spinal anesthesia the sphincters of the

anus quickly lose their tonicity and the anal canal becomes quite patulous. Operative procedures can then be performed with far less stretching of these muscles, with its consequent tearing and bruising of the tissues, than under any other method of anesthesia.

In those stricken with apoplexy, uremia, epileptic coma, and allied conditions, there is complete relaxation of the sphincter muscles, and to this is due their fecal incontinence.

The excessive use of alcohol and tobacco has been reported to cause an atony of the sphincters. The former especially, through immoderate and prolonged usage, may give rise to a neuritis, wherein there occurs an involvement of the nerve supply to the anal sphincters. The relaxed anal canal permitting numerous unrestricted fecal movements, together with the pitiful helplessness of the sufferer, makes life miserable not only for himself but for his attendants. Such an instance came under my observation some four years ago, in a heavily built man of 64 years. His anal canal was most remarkably relaxed, and the tormenting diarrhea which was added to his pain and to his utterly helpless condition truly caused him to look for death as a welcome visitor. Yet in time he slowly recovered, and as he acquired power over his other muscles the anal sphincters regained theirs, and finally his patulous anus became perfectly normal.

Bodenhamer has reported that atony of the anal sphincters is frequently present in hypochrondriacs, and in hysterical women. It has never been my good fortune to have had the opportunity to observe this.

In myelitis, and in other affections of the cord, there is an involvement of the nerve supply to the sphincters, which results in the anus becoming patulous. This gaping of the anus may be one of the earliest symptoms of a locomotor ataxia. Shortly before the old building of the San Francisco Polyclinic was destroyed in the great fire of 1906, a man, 39 years of age, came into my service in the rectal clinic. His only complaint was inability to control his bowel movements after the first sensation of a desire to evacuate was experienced. Examination disclosed a patulous anus, together with what was thought at the time to be a marked thinning of the external sphincter muscle. The cause of the latter could not be accounted for. Unfortunately no examination of his reflexes was made, nor, to be candid, even considered, and the diagnosis was held in abeyance. For six months or so after the disaster all track of him was lost, until one day I saw him walking along one of the city's thoroughfares, with that unmistakable, pathognomonic gait of locomotor ataxia; and thus the diagnosis was forcibly thrust upon me.

About a year ago, a charming woman, 30 years of age, ten years married, and of splendid social position, was referred to me by her physician for a diagnosis of the cause of her partial fecal incontinence. Examination showed a patulous anus; everything else normal in the bowel. Bearing well in mind my previous experience she was questioned, and the information was received that early in her married life she had several miscarriages at three months' term. To avoid arousing her suspicions no further attempt was made to obtain a luetic history. Her knee reflexes were absent; her eye reflexes sluggish. Further examination was left to her attending physician. A diagnosis of a probable luetic lesion of the cord was given him, and a Wassermann test advised. This was done, and found to be positive. Recently her physician informed me that she is now markedly ataxic.

REPORT OF A CASE OF STENOSIS OF THE DUODENUM DUE TO GALL STONES; OPERATION; RECOVERY.

By WILLIAM C. VOORSANGER, M. D., San Francisco, and CHARLES G. LEVISON, M. D. San Francisco.

The patient, A. L., female, age 46, came into the medical service of Mt. Zion Hospital September 2, 1912, complaining of slight pains in the abdomen, shortness of breath and vomiting. She made the statement that she had been ill more or less for two years with pains in her back. About 1 year ago she began to get dull throbbing headaches and the back pain increased. About six months ago vomiting began and she consulted a physician who treated her for several weeks in the hospital without appreciable result. Continuing to grow weaker and suffering constantly, from constipation, dizziness, headache and vomiting she came to the hospital (Mt. Zion). At the latter place it was discovered upon weighing her that she had lost about 40 lbs. in one year. She was unable to walk unassisted due to great weakness. She added just prior to examination that any exertion caused a sinking spell. Her family history is negative and personal habits have always been good.

Status: Anemic woman, with pigment scars about face, no glandular enlargement, pupils react normally, mucous membrane of mouth and conjunctiva anemic. No disturbance in the course of the cerebral nerves.

Chest well developed, lungs normal. Heart, borders normal, no murmurs, but sounds weak. Pulse 80 to 90, at times intermittent, often difficult to palpate. Abdomen, soft, flat, easily palpated, no masses to be felt, liver and spleen in apparently normal position; soft, slightly painful, area to palpation in the right upper quadrant slightly above and to right of umbilicus. Skin in right axillary region painful to pressure.

Patella reflexes slightly exaggerated; slight edema of legs. Rectal examination negative. Vaginal examination negative.

Laboratory findings:

Urine—acid, specific gravity 1020, no albumen, no sugar, no casts, a few pus corpuscles.

Blood examination:

Red blood corpuscles	4,500,000
White blood corpuscles	10,000
Hemoglobin	80%

Differential count:

Polymorph. neutrophiles	49%
Lymphocytes	43%
Large mononuclears	4%
Eosinophiles	3%
Basophiles	1%

Feces examination:

Showed no occult blood; eggs of tricocephalus dispar accounting for the eosinophilia, considerable mucus, and starch granules.

Stomach contents showed absence of free acid.

Vomitus: Constantly green in color.

An X-Ray photograph of patient's stomach was attempted but rendered impossible through her vomiting of the bismuth.

The cardinal points standing out for diagnosis in

this case were vomiting, loss of weight, absence of free acid in stomach contents and weakness. The points which were at first neglected but afterwards made the diagnosis were the green vomitus, absence of free acid in the stomach contents and the hyperalgesia radiating from above the umbilicus into the right axillary region. Naturally the first diagnosis thought of was carcinoma of the pylorus and it was determined to nourish the patient before operation. She had grown very weak through starvation and her pulse indicated that the myocardium was becoming involved. Gall stones were first diagnosed but this diagnosis was abandoned due to lack of classical signs and symptoms. That tricocephalus eggs which were present in the feces did not in any way account for patient's symptoms. While this case was puzzling us diagnostically an article appeared by Anders of Philadelphia (Sept. issue of the American Journal of the Medical Sciences) upon stenosis of the duodenum due to adhesions caused by a constricting cicatrix of an old ulcer. The picture described by him seemed to clear many doubtful points in our case and the diagnosis was then made of stenosis of the duodenum caused in all likelihood by pressure from gall stones. The case was referred to Dr. Charles G. Levison for operation and his report follows:

(The one feature of importance in this case is the fact that the woman recovered from the operation. In my opinion recovery was the result of the character of the anesthesia, for in her weakened condition as the result of the enforced starvation, death would in all probability have ensued if the ordinary anesthetic had been employed.

The abdomen was opened under local anesthesia which was produced by ½% novocain solution and when the diagnosis was made, gas and oxygen with an occasional whiff of ether were administered. The findings at the operation were as follows:

The gall bladder was 8 inches in length and was as white in color as pork; the wall was so closely attached to the stones that they could not be scooped out; the stones proved to be pure cholesterin; the fundus was attached to the duodenum and the attachments produced a definite kink; this was evidently the cause of the vomiting.

A cholecystectomy was performed; convalescence was uninterrupted.

Following the operation the patient ceased vomiting and it is now a matter of five weeks, during which time she has not vomited and she appears to be quite restored to health.—C. G. L.)

The interest in the above case lies in the fact that although a gall bladder choked with gall stones was found it made no symptoms per se, such as icterus, colic, etc., but only through direct pressure upon the duodenum. Thus can we account for our vomiting particularly green vomitus which became the all-important sign in the final diagnosis. The hyperalgesia in the right axillary region aided in making a diagnosis of probable gall stones, a sign to which I would particularly call attention.

Anders in his exhaustive article collects 262 cases of stenosis of the duodenum from literature, adding one himself. Of the total due to various causes, the principal agent being ulcer of the duodenum, gall stones have been reported only nine times or in three and forty-four hundredths per cent. of the total. J. E. Thompson recently reported in "Surgery, Gynecology and Obstetrics" (Sept. issue, 1912), nine cases of pyloric and duodenal obstruction due to causes within the lumen of the gut. Our case does not come under this heading. There was no occlusion of the duodenum from within. The stenosis was caused by direct pressure of the gall stones from without.

It is a matter of considerable interest as mentioned by Anders that 70.88 per cent. of all cases of duodenal stenosis are intra-duodenal in origin and only 76 or 29.12 per cent. extra duodenal.

If Anders' statistics are correct, then this case becomes the tenth where stenosis of the duodenum has been caused by gall stone pressure from without.

Discussion.

Dr. J. L. Whitney: I remember a case I saw in the hospital, of duodenal stenosis due to ulcer. Dr. Voorsanger's mention of green vomitus brought it to mind, because in that case we had the same occurrence of bile in the stomach contents. There was enormous dilatation of stomach, and we got no further than the diagnosis of pyloric stenosis. After the surgical service had shown us what the true diagnosis was, we remembered the green contents and saw that we ought to have made the correct diagnosis with this to guide us.

Dr. Francis Williams: I suppose it is proper to say a word about any case with vomitus of this character from whatever cause. I have in mind a case of middle age in my practice some years ago. Not only was the color as described, but the quantity was immense, far exceeding the fluids taken. Operation was refused, but after death they kindly allowed a complete autopsy. About the same time I noticed an article by Dr. Ochsner, in which he reported a number of cases of narrowing of the duodenum. This proved to be such a case; the lower end of the duodenum was decidedly narrow, but there was no evidence of a preceding ulcer.

Dr. Saxton Pope: One point of interest was emphasized in this case—the extreme loss of weight; 5% of the body weight, daily, occurs with complete obstruction. This was largely due to loss of water, and a great improvement takes place in these cases when water is supplied. Another remarkable feature is the absence of tetany, which frequently results from this lesion. I recently saw a case of duodenal stenosis in which Ringer's solution was given hyperdermatically with great improvement. After reading the literature referring to duodenal stenosis, it explained one or two cases of obstruction following gastroenterostomy; I have twice seen cases of acute obstruction due to drinking a glass of milk after gastroenterostomy. Last week I saw a patient who developed this phenomenon. About an hour after taking the milk, he began to have distress, vomited, and continued to vomit for 12 hours. He vomited large quantities of green fluid—two or three quarts, apparently. At the end of that time the vomiting suddenly stopped, and he overcame his obstruction. The milk, drunk upon an empty stomach, meeting with a high degree of acidity and milk curdling ferment, formed a tenacious coagulum, which presumably lodged in the anastomotic opening and occluded the intestinal lumen. This was a spectacular demonstration of what high obstruction of the bowel looks like.

Dr. Voorsanger, closing discussion: I think the important point here is that what seemed very obvious at the end was, as Dr. Whitney said, very obscure to us at the beginning. There was no question in our minds after this article of Anders, but we were most puzzled by the diagnosis at the start. We presumed that a woman who had vomited as much as she had, and had lost 40 lbs., must have a classical carcinoma of the stomach. The possibility of gall stones was mentioned, but it seemed almost impossible that we could have gall stones. We proceeded to observe the patient further, and could come to no conclusion at all. The only real point that made me think of stenosis of the duodenum was this green vomitus. It was not bright green, but it was of a greenish hue, and upon this Anders lays great stress, as the important sign in the diagnosis of duodenal stenosis. When I sent this patient up for operation, the diagnosis was made upon two cardinal points—greenish vomitus, and absence of free acid in the stomach contents. This case shows how easy it is to overlook obvious points in diagnosis until your at-

tention is called to them. Another point is that stenosis due to pressure from without is very unusual: according to the literature that has just been compiled, this is the tenth case on record.

A FEW POINTS IN REGARD TO CANCER OF THE UTERUS.

By EDW. C. MANN, M. D., San Diego.

In bringing this subject before you this evening I make no excuses for when we consider the frightful mortality from cancer in women enough cause is shown why we should bring up this subject frequently and impress upon all the value of early diagnosis and the newer methods of operation and treatment.

Upon the subject of diagnosis there can not be much new to offer. A wrong diagnosis is seldom made by any man who takes the trouble to examine his cases. But the early cases are too often neglested by the busy practitioner or frequently the patient herself is at fault, refusing examination or not consulting a doctor because she is afraid she will be told she has a cancer or operation will be advised. The title of a book by Dr. Van DeVere of Albany, "She Thought it Was Her Change of Life," brings before our minds the cause of lack of early diagnosis in many of these cases, and here I would like to say it is the duty of every one interested in the subject of medicine to impress upon all women the fact that flooding and vaginal discharge at the time of the climactrix is not a normal condition and any deviation in the health of the pelvic organs or in the normal stoppage of the menstrual flow should be a signal for vaginal examination. You, of course, all know that pain is not an early symptom of cancer but most of the laity do not and it is our business to make them understand it.

Cancer of the fundus uterii is, compared to that of the cervix, almost a benign condition. The average age of those having that form is usually greater than those having the cervical type and the growth is slower and remains confined to the uterus for a much longer period and the consequent mortality is low both from the standpoint of recurrence and surgery. The surgical mortality should not be much over 2% and 60-65% of those operated on early should have no return. A complete hysterectomy making as wide a sweep of broad ligaments and parametrium as possible is here all that is necessary and usually gives good results.

In cancer of the cervix we have to do with an entirely different condition. The diagnosis is almost always very easy. Clinically the finger nail and pathologically the microscope will always tell us and absolutely no excuse is possible for the man who fails to make a diagnosis of even an early case of cancer of the cervix.

The questions most under discussion at the present time are first, which are the operable cases and how radical an operation should be made.

Bovee answers our first question by saying that it depends in a large measure on the operator as that which is operable to one operator is not to another. The older method of determining the operability by the movability of the uterus must be superseded by a more careful examination and in many cases an exploratory incision must be made before it can be determined how far the cancer has progressed and we make a prognosis of hopeless and incurable cancer. In all cases the cancer mass should be curetted away and then one can better determine how far the broad ligaments, the bladder, rectum and uterus are involved. A fixed uterus may sometimes be successfully operated on because the rigidity of the broad ligaments may be due to inflammatory conditions spreading from infection in the growth and also a comparatively large mass, apparently immovable, may have no metastaces in the lymphatics or parametrium.

The lymphatics which become involved early in cervical cancer are situated mostly in the parametrium and along the large blood vessels of the lower abdomen (iliac and inguinal region).

In two-thirds of the so-called operable cases the cancer has spread outside the cervix, the parametrium being involved in almost all of these either by direct extension or lymph involvement. In about one-third of these cases that we operate on, lymph glands scattered throughout the abdomen will be found involved.

In some types the bladder is one of the first to be invaded, which will make operation almost hopeless. Cancer will also spread by continuity, slender filiments running out following nerve and lymphatic spaces.

To cure all of these operable cases it would be necessary to dissect the lymphatics from the blood vessels, free all tissue lateral to cervix and the lower part of each uterer, removed the posterior wall of the bladder as well as the uterus. These conditions are manifestly impossible of accomplishment and so we must expect return in many cases. I believe that when the bladder is involved or the lymph glands with the exception of those in the parametrium we can not prevent return. Theoretically, then, if we remove a considerable portion of vaginal wall and most of the parametrium with the uterus and have no primary mortality or secondary cancer infection we might expect cure in two-thirds of the early cases.

A few years ago the best men in the country showed not over four to eight per cent. of cures and with the ordinary hysterectomy that proportion is all we can expect. The cancer recurring in the scar or parametrium showing a wide enough incission was not made.

To Emil Ries of Chicago and Wertheim of Berlin are due the formation of a school of more radical operation. Ries is the most radical of all the men doing this work. Wertheim more or less following Ries has developed a technic which with some slight modifications has become almost standard for this operation. He claims about forty-five to fifty per cent. of cures (five years) and a primary mortality of about ten to fifteen per cent. Ries has a higher primary mortality, fifty per cent. or more, but not more than one to two per cent. of returns.

Almost no American surgeons are doing the radical operation of Ries at the present time and

comparatively few following that of Wertheim, but many of our best gynecologists, Kelly, Clark, Cullea, Webster, Peterson, Boldt, Stone, etc., favor and are doing the radical operation. The reason why the average surgeon does not attempt it is because of the difficulty, even for men with special training in pelvic work. Jacobson of Toledo found that only twenty-two out of three hundred thirty men approached, were doing this form of operation.

With the more radical operation the number of patients that can be operated on with a chance of success has increased probably by one-fourth.

My own experience with this operation is not large. A short time after Wertheim's paper appeared in *Surgery Gyn. and Obst.* I worked it out on two cadavers and have since operated on three cases and was forced to give up the complete work on a fourth because of the thick abdominal wall. Of my three cases all survived the operation. Two are alive and well (1-3 yrs.). The other had a recurrence six months afterwards.

Detailed accounts of this operation will be found in the newer text book and I will only give the principal steps of the operation, which are as follows:

1. Curette away as much of the mass as possible and cauterize.

2. Ligate ovarian artery at the top of broad ligament.

3. Ligate round ligament.

4. Separate peritoneum along round ligament and continue this through vesico uterus fold.

5. Follow ureter from posterior half of broad ligament to parametrium.

6. Ligate uterive artery outside crossing with ureterer.

7. Vagina separated from rectum and bladder.

8. Two L-shaped clamps applied to vagina below cervix and mass removed.

It is probably best to catherterize ureters before operation to make them more prominent.

This operation is, I believe, the best we have at present and can be done by most operators if the anatomy of the parts is well known.

So much for the operable cases. What are we going to do with those that have advanced beyond the reach of the knife? I believe without question the cautery is next in order, not the paquelin or the soldering iron, for the heat from these is not great enough, but the galvano cautery will bake the growth to a considerable depth. Bryne Boldt, Fridreick Gelihan and others have used it with good results, obtaining relief from the symptoms, prolonging life and in some cases absolutely curing the patient.

Dr. Gelhorn has advocated acetone in the treatment of the bleeding discharge and odor accompanying the ulcer. It is applied on pledgets of cotton and left in place for twenty-four hours. The results as far as the conditions for which it is used are extremely satisfactory and I have used it on eight or ten cases with very good results. I have not found that it inhibited the growth.

The medical treatment of cancer as far as displacing the surgical is still in the future. One drug after another as well as X-ray has been tried and found wanting and until the last few years surgery and morphine were our only resorts. Whether they will ever be superseded remains to be seen.

Great efforts are being made in the various cancer laboratories of the country and a few months ago I had a chance to follow the work of New York State Cancer Laboratory in Buffalo. They are following two main lines of work, a laboratory diagnosis and a serum or vaccine treatment.

The vaccine therapy has given an impetus to a new form of treatment in which the patient's immunity is raised in an effort to overcome the disease. Not any very startling results have been announced as yet and it is probable that a patient with low resistance in the last stages of the disease will not be helped, but rather the opposite.

In 1907 Dr. R. H. Gaylord of the Cancer Laboratory tried the injection of an emulsion of cancers in one of my cases in the wards of the Buffalo General Hospital. This was done in the same manner that Gilman has since advocated. The result was not good and the patient died rather sooner than she otherwise would, she having no immunity and the large dose doing more harm than good. Within the last year under more scientific principles the same line of work has been carried out with much better results. At the last meeting of the American Society of Cancer Research some very interesting papers were read, among them one by one of Dr. Gilman's co-workers, who had been with him in the Philippines. He analyzed these results and they were distinctly bad. They could not find a case in which a return was prevented by the vaccine, although a few cases were benefited for a number of weeks, but these were cases in which a streptococcus infection was produced (Coley). In most of these cases an emulsion was prepared with carbolic acid or formaline and with this absolutely no result was produced. In the New York State Laboratory a powder is used prepared from either a rat or a human tumor. It is first frozen and dried in a vacuum then pulverized for four days in a ball mortar which apparently sterilizes it. It is then used by mixing with salt solution. The dose is only 3-4 mg., a very small dose compared to Gilman's, but it can be repeated once a week for some time. The results although not brilliant still promise something for the future. Two or three inoperable cases have been cured and others relieved from pain, but in cases that have little immunity the resistance which they have may be broken down.

I have one case which is under treatment and which I am watching with interest. Mrs. T., age fifty-nine years. Mass appeared about three years ago. She was treated for about one year and finally changed doctors. I was asked to operate and when first seen a small tumor the size of a dollar was found below the pectoralis major half way between breast and axilla, the breast being apparently normal. Lymph nodes from the size of

a walnut down, were felt in the axilla. In the operation the nodes mass and part of the breast were removed and a cancer was found involving all three. She made a normal recovery. Gilman's emulsion was used immediately after operation and 1½ yrs. ago I started her on the serum powder, the carcinoma of a rat, and have repeated it five times. The remains of the breast have decreased in size, although without doubt it contained some cancer, notwithstanding the fact that it felt like gland tissue. She has gained weight and no sign yet of reappearance in scar or axilla has been noted. Of course, it is only 2 yrs. since the operation and nothing can be said about cure.

In closing I should like to say that I think the only field as yet for serum treatment is in the inoperable and post operative cases and in operation for cancer the more growth removed the better chance for the patient to develop an immunity.

I also wish most strongly to advocate a more radical operation for cervical cancer for, although the primary mortality is higher, the percentage of cures is greater and unless we hope to get permanent cure hysterectomy for cancer is not a justifiable operation.

A CONTRIBUTION TO THE SUBJECT OF PELLAGRA IN CALIFORNIA.

By V. H. PODSTATA, M. D., and O. C. WILLHITE, M. D., Livermore.

The attention of the medical profession of California has already been drawn to the menace of pellagra. On December 14th, 1909, Dr. Blue, of the U. S. Public Health and Marine Hospital Service, then at San Francisco, reported one case of that disease and gave a general outline of what was then known of it. In April, 1910, at the Fortieth Annual Meeting of the California State Society at Sacramento, Dr. W. A. Clark of San Leandro demonstrated one case of the disease. He mentioned that several patients, evidently suffering from the same disease, were seen by him prior to the time when Dr. Blue had called his attention to the disease. In discussing this report Dr. D'Arcy Power mentioned that he had seen at least two cases of pellagra prior to the time when his attention was called to the disease. He also expressed his conviction that the disease was not such a recent importation as some imagine.

Since that time there were other contributions to the study of the disease on this coast. However, it is still the firm opinion of many members of the profession that the disease is decidedly rare on this coast and that it therefore does not merit any consideration excepting as a curiosity. The writers of this article are by no means pessimists or alarmists. However, their experience, both in Illinois and, during the past year, in this state, has compelled them to give more than a passing notice to this subject.

It was in May, 1909, at the Cook County Institutions in Illinois, during the superintendency of Dr. Willhite, that one of the senior physicians, Dr. Pollock, became greatly puzzled over a number of curious cases of "sunburn," which appeared in his department. He states that it was largely a coincidence, when reading Bianchi's Psychiatry he came to the description of pellagra, which so resembled his own cases that he began investigating the subject. Up to that time there had been practically nothing known of the disease in the Middle West. When he became reasonably convinced of his diagnosis he secured consultation with Dr. Lavinder of the U. S. Marine Hospital Service, who confirmed the diagnosis without any hesitation. Further search revealed the presence of over thirty cases of the disease in that institution. An excellent report upon the study of the disease in this institution is to be found in Vol. X, No. 2, of the *Journal of Infectious Diseases*.

The news that pellagra was found in Illinois spread throughout the Middle West, and soon after several other institutions reported similar discoveries. In the Elgin State Hospital in Illinois were found twelve cases. The staggering news came, however, from the Peoria State Hospital where over two hundred cases were reported in August, 1909. These discoveries were verified by experts from the U. S. Marine Hospital Service. The writers have had an opportunity to examine most of these institutional cases and some cases outside of the institutions.

There has been a great deal of work done in Illinois towards the discovery of the cause and pathology of the disease. It would require too much time to go over the studies carefully. Further, it would be of no service as no discoveries were made of any practical importance. Dr. Dick found a bacillus corresponding to the bacillus Maydis, formerly found associated with pellagra and demonstrated that agglutination occurred in every case tested (five cases at 1-10, two cases at 1-20), whereas normal serum in control experiments did not agglutinate the organism except in dilution of 1-2. However, the bacillus failed to produce the disease when injected into the monkeys or fed to them. Further, the blood of pellagrins was found toxic for the monkeys in only one instance and in that instance the results were doubtful. A careful search for the Simulian fly failed. Various methods of treatment were tried and found of little if any value. Among the therapeutic measures was transfusion of blood which was tried in twelve cases at the Cook County Institutions without any convincing results.

The same lack of positive results was reported at the National Conference on Pellagra in Columbia, South Carolina, (1909), and about a year ago by the Illinois Commission on the Study of Pellagra. In only one respect were the reports of definite value. That was in deciding that corn was not the necessary etiological factor, if in fact it ever was of importance. Another important result was a renewed search for the disease, resulting in many new cases being discovered in various parts of the United States. Further, the conviction grew upon every one, who has given the matter serious thought, that

the number of reported pellagrins was only a small fraction of all cases of the disease then in existence.

The writers are fully conscious that the data they are able to present as to the presence of pellagra in California is scarcely sufficient to warrant any definite conclusions. There is to be considered the element of chance which may play a very important factor and discount all conclusions. Nevertheless the figures at hand are sufficient to stimulate further search for the disease and whenever found a careful inquiry into the etiology.

Of the 180 consecutive admissions studied by the writers in the Livermore Sanitarium there were found three well marked cases of pellagra. Two were unusually severe, both ending in death. One of these as the history shows has had active signs for only about two months and for the first time. That would show one case out of every sixty as admitted to be suffering from pellagra. The very large majority of admitted cases were suffering from mental and nervous diseases. All three cases of pellagra showed decided mental abnormalities at the time of admission. No cases developed while in the sanitarium.

The following is a brief outline of the cases and some conclusions as they appear of weight to us:

Case No. 1. Mrs. N., age 36, white, born in Missouri. Resided in California for the last 20 years. Distinct neurotic history. Had been a stenographer prior to marriage. Claims to have had "chills and fever" when 12 years old. Always suffered from indigestion.

For a number of years patient resided in or about Los Angeles. Later lived in Sacramento and lastly in and near San Francisco. While in Sacramento, several years ago, had another attack of "chills and fever." During the last three years the patient lived with her husband in a small town in the mountains at an altitude of 5,000 feet. There is a very clear stream of water through the town all year round. Climate is cold, as might be expected. At times it would snow in July. Air is very dry and clear. Patient was reasonably well physically, excepting attacks which she called indigestion. Always there was more or less tendency to constipation. Patient recollected that she had had several attacks of unusual redness of the skin upon the dorsum of her hands while living in this place, but does not remember the exact time and intervals. Also had attacks of unusual looseness of bowels but does not remember in what relation they were to the redness of the skin.

About the same time the patient developed first of all an undue irritability and impulsiveness as well as stubbornness. Soon after she commenced to accuse her husband of exercising undue and unusual influence over her. She accused him of hypnotizing her. Later she became convinced that he read her thoughts and influenced her actions. She quarreled with him and avoided him as much as possible. Gradually there developed true hallucinations of hearing. She received messages from the "Spirit." The "Spirit" would cause her to move her arms when she spoke, to "acknowledge her," and testify that she spoke the truth.

In October, 1910, the conditions became unendurable for her and she left home, notwithstanding all efforts of the husband to make her comfortable. She came to live with her friends in Sacramento. She lived very near the river and claims while there she had another return of the above spoken of "chills and fever." However, she called for no physician and took no treatment. Her sensory deceptions continued there the same as at home and she left on December 19th for San Francisco. At that time her mental symptoms were more pronounced than ever and her response very active. Her ideas, aside from those of persecution, were of a religious nature and she became an enthusiast in the "culture of the soul." During that time she ate rather irregularly, at times starving herself for religious reasons.

In the early part of 1911 the patient was attacked by an extraordinary constipation. Formerly such attacks were easily removed by eating fruit. This time, however, nothing helped. Her condition became so serious that, notwithstanding her serious scruples against taking medicine, she went to a drug store and obtained some proprietary remedy. This finally gave her relief.

In March, 1911, while still in San Francisco, the patient developed the first typical and therefore certain evidence of pellagra. Patient is able to describe the condition of the mucous membranes especially of the mouth and of the skin upon the hands. The skin lesions were situated symmetrically upon the dorsum of the hands but extended as bands around the wrists for some distance. There was a marked redness of the tongue, especially of the edges, marked salivation and a very troublesome diarrhea; the stools often of a greenish color.

During that time her mental condition grew more acute, aural hallucinations being particularly prominent. Her self-control decreased in proportion. After changing her place of residence several times without obtaining relief from her troublesome hallucinations, she came to a police station and demanded protection. Her true state was soon recognized and it resulted in her being taken to the detention hospital. This was in the latter part of June, 1911, and the evidences of pellagra had then gradually subsided excepting some erythema of the hands, also some redness of the mucous membrane of the mouth. The diarrhea ceased.

At the time of her admission to the sanitarium the body of the patient was found very emaciated. There was present a motor and sensory paresis of the left forearm and hand. There also was some slight congestion of the dorsal surfaces of both hands, with the characteristic evidences of trophic changes in the skin. The paresis of the forearm gradually subsided, in fact completely disappeared within ten days after her admission. From the patient's story it was very likely due to her maintaining the arm in an abnormal position.

It was not till August that the more pronounced evidences of pellagra developed. The attack came rather rapidly and the skin and mucous membrane were involved at about the same time. The patient had been kept out of doors much of the time and her arms were exposed to sunlight to a considerable extent. The erythema spread all over the forearms, but especially over the hands, but this time involving both the dorsal and palmar surfaces. The lesion was at all times symmetrical on the two sides of the body. Later a slight roughening and brownish discoloration of the skin appeared upon the neck and last of all in a butterfly fashion upon both sides of the nose with a narrow connecting link across the bridge of the nose.

The mucous membrane of the mouth and nose was very angry, but worst of all the edge of the tongue. Salivation was profuse and occasional eructations brought forth greenish mucus evidently both from the esophagus and the stomach.

Various forms of treatment were tried. The one which appeared of most temporary service was the cacodylate of sodium, which certainly proved of value in decreasing her mental confusion and temporarily decreasing the diarrhea. However, the benefit was of short duration.

As the disease advanced she became morose, irritable and unresponsive. She blamed the nurses at times for being responsible for her illness, which she evidently considered of syphilitic nature. At other times she told the nurses she knew her husband had infected her with that disease. She resented everything that was done for her and the mere mention of her husband caused an angry flare in her face. Her hallucinations were very active, but she responded less to them, probably due to increasing weakness.

The effect of the first large dose (grs. 3 hypodermically) of the cacodylate was remarkable in that it cleared her morose disposition as if by magic. She became very pleasant and talkative. She would joke with the nurses, thereby causing much astonishment among them. This might have been due to other causes, but as another dose of the drug produced somewhat similar even though less pronounced symptoms, it is likely that the change was due to the cacodylate.

The progress was variable after that, there being some improvements but always followed by a relapse and sinking into a worse condition than ever. The skin peeled off in great thick patches and as they were removed under them appeared purple, congested and unhealthy looking skin. This desquamation progressed until October 8th, when the patient died, evidently from exhaustion. It should be noted that as a rule she had no elevation of temperature during her entire illness.

A permission for a post-mortem examination was obtained, but, unfortunately, not until about 28 hours after death. The results of the macroscopic post-mortem examination were as follows:

Inspection: The body is that of a woman, about 36 years of age, much emaciated. The head shows a fair quantity of dark brown hair, somewhat streaked with gray. No deformities or injuries. The skin over the forehead considerably roughened and scaly. Similar condition found in two patches on the side of the nose with a narrow bridge across the root of the nose. Also patches about the mouth, over the chin and, slightly on the cheeks. Similar condition of the skin found in large patches upon lateral surfaces of the neck. Quite similar desquamation is shown about the border of the mouth and the edge of the nose, extending deep into the nose.

The skin of the hands, both dorsal and palmar surfaces, shows deep desquamation, and large thick patches of it hang loose. This condition reaches from the nails to the wrist and including the wrist. In several areas over the joints the skin is broken and the break filled with dark clotted blood. The color of the new skin is generally pale, but areas of dark purplish color may be seen. Beyond the wrist the skin is very scaly, the unpeeled portions being brownish in color, the new skin pale and thin, with the exception of some purplish patches.

The skin lesions are very closely symmetrical in their location and outline as well as in respect to the severity of involvement. Outside of the areas described the skin is of normal color and consistency. The fat layer under the skin is much decreased. No involvement of the skin of lower extremities. There are deep transverse ridges upon all finger nails. No nails lost.

Post-mortem rigidity still rather marked. No external signs of decomposition. Postmortem lividity fairly marked on depending portions. Arms are held in close flexion, the hands being placed close to the head, resembling the attitude of supplication. The facial expression is that of suffering. Eyes are closed, pupils even, medium sized.

The abdomen is somewhat distended and sounds tympanitic.

The breasts are unusually large, considering the marked emaciation of the body.

The chest: Subcutaneous fat greatly reduced. Muscles of rather dark red color. Ribs and cartilages apparently normal. Pleura negative excepting slight old adhesions of left apex. Pleural fluid somewhat increased left side. Lower lobes, posterior surfaces of both lungs, show some hypostatic congestion, but crepitate throughout.

The heart is small, flabby and pale. Subpericardial fat in fair amount and yellowish in color.

The abdomen: The liver is small, rather pale in patches and mottled. Gall bladder somewhat distended, no concretions.

The stomach much dilated and distended with gas. Vessels at both greater and lesser curvature much dilated. Mucous lining shows red and dark purple patches. The mucous membrane appears thin.

The duodenum shows some congestion externally. The small intestine somewhat congested up to a point about three feet distant from the duodenum, where appear peculiarly rounded, sharply outlined areas, colored black or black and yellow, principally near the mesentery. Similar areas found near the ileocecal valve, but not in the large intestine. The small intestine so affected was found collapsed.

The spleen was found moderately enlarged and its capsule rather easily torn, but the pulp not excessively congested and the connective tissue not increased.

The pancreas presented no marked change excepting that it was rather more firm than normal.

Both kidneys were increased in size and congested, capsule peeling rather easily.

Old adhesions about appendix.

Uterus very small, freely movable, very hard in consistency. Both ovaries shriveled up and hard.

No enlargement of lymphatic glands in mesentary or elsewhere.

Suprarenal glands rather large and very soft, tearing very easily under finger pressure.

(To inspection should be added that no enlargement of the thyroid was found.)

Dr. W. Ophuls was kind enough to make a microscopic examination of the specimens taken and reported as follows:

Source of material to be examined, skin, kidney, spleen, liver, intestines.

Kidney, partial necrosis and desquamation of the epithelium, slight fibrous thickening of intestinal connective tissue around some glomeruli.

Liver, apparently normal.

Stomach, slight chronic gastritis, otherwise apparently normal.

Small intestine, apparently normal.

Skin, cellular infiltration of papillary layer of cutis, irregularity and atrophy of surface, epithelium horny layer and rather thick in places.

Spleen and heart muscle apparently normal.

Case No. 2. Mrs. W., age 34, born in Washington, D. C. Lived in a dry Arizona district for many years. No neurotic history in family. Patient had an attack of melancholia five years ago and recovered fully within four months. She continued well until her confinement, October, 1910, from which time she failed physically. Her mental collapse came in January, 1911. She was treated at home for a time but was finally taken to a sanitarium in Los Angeles where she remained for about two months. It was there the patient developed the acute symptoms of pellagra. She entered the Livermore Sanitarium in the latter part of September, 1911.

At the time of entrance the patient was very emaciated, the color of her skin was grayish yellow, excepting the dorsal surfaces of the hands and a band around the wrists which areas were of dusky red color. The skin in these places was of unhealthy appearance, very thin and soft, quite a contrast compared with the surrounding areas, reminding one at once of trophic changes. There were deep transverse ridges in the nails. Upon the right hand near the thumb there was a roughened surface where the skin was peeling off in large scales. Otherwise the skin was smooth and

the involvement quite symmetrical on the two sides. The mucous membranes were not involved seriously there being noticeable only some redness of the edges of the tongue.

The mental condition of the patient was a peculiar confusion upon the underlying basis of a depressive emotion. No definite sense deceptions could be elicited, yet the perception of external stimuli was confused, consciousness dreamlike. In the association sphere both the impressibility to and retentiveness of recent impressions were diminished, thought formation retarded and confused. At times there was a decided poverty of thought and monotonous repetition of same sentences showing depressive ideas and the emotion of fear. Common with other depressive conditions there was a refusal of food. Volition was greatly interfered with and a slight negativistic tendency developed.

The patient remained in the sanitarium for four months. The physical condition improved to a very considerable extent but there was no corresponding improvement of the mental condition. The mental state merely showed greater mental clearness but no decrease in depressive condition.

There was no return of active symptoms of pellagra but the condition of the skin never returned to normal. The patient is now in one of the state hospitals in California. A recent report states that there has been no return of the active symptoms of pellagra so far. We feel justified, however, on the basis of our findings and a rather indefinite history of the patient prior to her coming to us to consider her a subject of that disease without any doubt. Also we believe very likely the warmer season will bring a return of the active symptoms of the disease.

Case No. 3. Mrs. W. H. W., age 50. Born in Germany. Lived in California for thirty years. Has been nervously unstable for a long time. Says that she has had a dull pain in her back for twenty years. Has been to many physicians complaining of various nervous symptoms. For the last six years had gone to a Chinese "doctor" who told her that she had liver trouble and ordered her to take large doses of olive or mixed oil every day. The patient has taken this oil for several years. This was largely for the relief of a very persistent constipation which also had lasted for some years.

Patient stated that she had had "chafed" hands for a considerable time but could not say just how long. Had to go to bed on account of a nervous weakness which developed about a month prior to her coming to the sanitarium. More recently developed diarrhea which was very persistent.

At the time of her admission to the sanitarium the patient chiefly complained of great weakness. This she said was particularly marked below her waist. She stated that she could not stand up and in fact had to be carried up to her room. Further, she complained of the persistent diarrhea which weakened her much.

On examination we found her badly emaciated. The skin was of yellowish gray hue, dry and inclined to be scaly. The dorsal surfaces of the hand were purplish in color, the skin peeling off in large and thick patches under which the color was particularly dark and the skin very thin and unhealthy. This condition extended to the wrist but not beyond it. The areas were quite symmetrical but not clearly defined. The lips were rather red and the tongue showed a decidedly red border. The mucous membrane in the mouth was quite congested.

The abdomen was slightly distended with gas. On palpation tenderness was complained of by the patient but was not localized in any definite area. Patient complained that she was unable to retain the contents of her rectum even for a short time.

Her heart was flabby in action but regular. Arteries showed considerable thickening.

The neurological examination showed an impairment in sensation and motion upon the right side, particularly the right leg. Measurements showed a slight decrease in muscle volume and considerable decrease in muscle tension in the same extremity. The patient was quite unresponsive so that the finer tests were impossible. The patient claimed to be exhausted after the slightest effort. Repeated tests showed no kneejerks or jerks of the tendo-Achilles. The sensory impairment was apparently largely psychical. At times when the patient's attention was directed to wards it, there was a distinct hyperesthesia upon the left side of the body.

The psychical examination showed the following results: In the sphere of perception there was noticeable some slowness but that also was more largely apparent than real as the patient never failed to well perceive what was said about her to the nurse, particularly the various directions as to treatment. Reasoning appeared limited to matters directly concerning her but in that respect was quite good excepting for vague ideas of abnormal nature which could scarcely be termed delusions as they were not fully believed in by the patient and were largely said for the effect they were to produce. So she said that she had been forsaken by her husband, that no one liked her, that everybody had treated her "mean" and for that reason she did not like anyone. Her emotional control was very poor and depressive emotions predominated. She reacted to stimuli slowly as a rule, but active impulsive reactions were not uncommon.

For a few days it appeared that she was improving, apparently under the effect of the cacodylate of sodium which was tried in medium doses (grs. 1½). She was even able to walk about with a little assistance and her appetite improved. However, this improvement did not last long. It was followed by renewed and more serious attack of diarrhea which was very difficult to check.

The patient became absolutely bedridden, being unable to even sit up in bed. Upon her buttocks there appeared a fairly symmetrical skin involvement, however, not typical of the disease, rather suggesting pressure symptoms in a very unhealthy skin. Her mouth became more red and her hands grew more purple.

During this time the patient was very irritable and often refused to answer questions put to her. At one time, when her nurse failed to at once respond to her call, she threw a glass at the door with such a force that it broke in many pieces.

On May 19th, only nine days after her arrival at the sanitarium, the patient suddenly complained of a pain in her abdomen, which commenced to distend at the same time, particularly upon the left side. The temperature was only slightly elevated, as it had been during the entire illness, varying only very little from normal. Careful palpation failed to reveal any localized tenderness. She was tender all over. However, she herself was not in very serious distress; her heart showed only fair increase in rate and that was evidently due more to the pressure from distended abdomen than to other causes. The passing of some gas resulted in considerable relief of the pain. Our treatment was therefore directed chiefly to the relief of the distress by emptying the intestine by means of an enema and by application of turpentine stupes over the abdomen. The nurses reported an improvement in her condition. The patient spoke to them without any serious embarassment. Suddenly, however, the nurse's attention was attracted to the patient on account of a choking sound as though the patient's mouth had suddenly filled with water. The end came immediately after without a sign of struggle.

Through the courtesy of Dr. O'Brien of Sacramento, who had referred the patient to us, a permission for a post-mortem examination was obtained; unfortunately, however, the time was lim-

ited so that a careful examination was impossible. Dr. O'Brien who conducted the examination found, however, that irregular portions of the small intestine were distended while other portions of the intestine were found collapsed. The distension was apparently due to a paralysis of the intestinal wall. The walls of the intestine were deeply congested in areas but nowhere was found any indication of peritonitis. The time did not permit opening of the thorax or the examination of the brain and the nervous system generally which was exceedingly desirable under the circumstances.

CONCLUSIONS.

1. The most important conclusion is that pellagra has been found to exist in three cases out of 180 consecutive cases admitted to a private sanitarium.

2. None of the three cases was imported to the Western coast, but evidently originated there.

3. None of the patients belonged to poverty-stricken class of people. In all cases, however, nutritional disturbances preceded a long time the development of definite evidences of pellagra.

4. In one case there is a definite history of long use of vegetable oils and this case happened to be the most acute, affecting the nervous system to the greatest extent and terminating fatally in the shortest time.

5. All three cases evidently originated without any infection from similar cases and there is no evidence that anyone was so afflicted as a result of contact with them.

6. While it can not be said that pellagra had been a causative factor in the mental or nervous breakdown of any of the three cases, it is evident that in every case it has greatly and in a detrimental way influenced the mental and nervous condition.

7. Cacodylate of sodium, tried in two of the three cases has not had any lasting beneficial effect upon the disease. The same is true of all other treatment attempted.

8. The final conclusion is that there is a real need of close study of that disease, first of all a diligent search for all cases suffering from it. It is more than likely that the number of its victims all over the United States, therefore also in California, far exceeds the estimates of most physicians.

NOTICE OF MEETING.

A meeting of the Northern California District Medical Society will be held in Chico on Tuesday, November 12th. A very interesting program has been provided for this meeting, and several papers will be read by physicians from San Francisco.

THE SIGNIFICANCE OF BACTERIA IN MILK.

By S. LEVIN, Ph. G., Ph. C.
From the Laboratory of the Napa State Hospital, Napa, California.

The advanced step which has been taken by several public health institutions and the prominence which the propaganda for clean milk has gained recently means much to the welfare of the general public. Milk, which constitutes one of the most important foods for the sick and convalescent, an article which replaces the mother's feeding to the infant, a foodstuff which, because of its highly nutritious properties, enters almost every household in our communities, has not been given the consideration it deserves.

To our gratification, in several large cities, rules and uniform standards have been adopted, and laws enforced, which enable the sanitary condition of the public milk supply to be controlled; but, in the majority of cases, up-to-date methods of public hygiene and sanitation as far as milk is concerned have been almost entirely neglected. The standards adopted by some cities for the control of the milk are so incomplete that they do not give sufficient guaranty as to its cleanliness. The chemical standard of milk, which is one of the most prominent points in various places in their milk ordinances, is of secondary importance from a standpoint of public health. While it safeguards the people from fraudulent methods in business transactions, it almost entirely ignores its sanitary condition.

It has been agreed by numerous workers after thorough investigations along the line of the bacteriological examination of milk, that milk, by itself, is practically sterile and the high number of bacteria usually found in commercial milk is due to external contamination only.

Rosenau [1] has found respectively 60, 160, 400, and 500 bacteria per c. c. of milk from individual cows by applying sufficient cleanliness.

Wellem and Miele [2] have obtained milk containing two and one-half bacteria per c. c., using aseptic methods.

Wyman [3] claims that milk can be obtained from healthy cows in small quantities entirely free from micro-organisms.

The writer has obtained samples from healthy cows by applying ordinary precautions as to cleanliness as low as 0, 40, 60, 70, 80, 100, 120, and 160 bacteria per c. c.

To establish the difference in the number of bacteria present in milk where precautions as to the milking and handling of same are taken and of that where methods of sanitation are ignored, a series of experiments were undertaken.

The isolation of the pathogenic organisms was not attempted, except that in the case of the mixed milk B. coli were looked for.

The media, plating, and the procedure of the examination were made in accordance with the standard methods adopted by the laboratory section of the American Public Health Association.

I am indebted to Mr. C. N. Whitaker, Steward of Napa State Hospital, for his kindness in placing the necessary material and cows at my disposal which made the undertaking possible.

Experiment No. 1. A herd of twenty cows was taken from a dairy where the most rudimentary sanitary principles connected with the obtaining of milk were neglected; barn yards filthy, cows dirty, milk utensils washed with water found to be contaminated with B. coli, milkers of slovenly appearance to whom personal hygiene was unknown, pails wide-mouthed, which, in case the cow should happen to urinate in the process of milking, would not prevent the urine from dripping into the contents of the pail.

Experiment No. 2. Samples obtained under same

circumstances, except that narrow-mouthed vessels cleansed in hot, boiling water were used.

Experiment No. 3. Cows cleaned, udders washed with lukewarm water and wiped with a clean cloth, vessels narrow-mouthed and cleansed in hot boiling water, milker's hands scrubbed with soap and clean water and wiped dry with clean towel, milker dressed in clean white gown.

The following results were obtained:

EXPERIMENT NO. 1.

Cow No.	After 3 Hr. at Room Temp. Bact. per c.c.	After 20 Hr. at Room Temp. Bact. per c.c.	After 20 Hr. at Temp. 11° c. Bact. per c.c.
1	4,000	9,000,000	10,000
2	16,000	19,000,000	26,600
3	4,800	2,400,000	5,800
4	39,600	8,000,000	46,400
5	16,200	3,200,000	19,000
6	42,500	17,001,000	34,000
7	15,300	9,500,000	27,000
8	16,000	4,000,000	42,000
9	24,100	29,000,000	36,000
10	14,000	12,000,000	30,000
11	29,000	4,006,000	34,000
12	11,800	5,000,000	19,000
13	48,000	126,000,000	62,000
14	30,000	19,000,000	1,050,000
15	12,000	12,250,000	26,000
16	19,300	6,000,000	28,000
17	36,000	4,350,000	44,000
18	14,000	2,000,000	24,000
19	19,000	2,000,000	300,000
20	33,900	11,000,000	116,000
Minimum	4,000	2,000,000	5,800
Maximum	48,000	126,000,000	1,050,000
Average	22,275	15,235,350	98,980

EXPERIMENT NO. 2.

Cow No.	After 3 Hr. at Room Temp. Bact. per c.c
1	2,900
2	9,000
3	3,960
4	17,600
5	5,000
6	19,000
7	13,000
8	12,300
9	19,600
10	12,400
11	4,000
12	9,800
13	13,000
14	26,000
15	19,000
16	7,100
17	4,300
18	4,200
19	9,100
20	12,000
Minimum	2,900
Maximum	26,000
Average	11,163

The difference in the bacterial count of series No. 2 and No. 1 shows that clean utensils play an important part in the obtaining of clean milk, and when milk holders are washed with boiling hot water and free from contamination the milk contains a lower count of bacteria.

EXPERIMENT NO. 3.

Cow No.	After 3 Hr. at Room Temp. Bact. per c.c.	After 20 Hr. at Room Temp. Bact. per c.c.	After 20 Hr. at Temp. 11° c. Bact. per c.c.
1	240	126,000	8,000
2	160	119,000	10,100
3	480	1,112,000	14,100
4	600	28,000	9,000
5	1,800	79,000	32,000
6	150	142,600	6,000
7	70	19,480	8,000
8	190	124,000	12,000
9	200	37,000	14,500
10	4,000	2,262,000	28,000
11	120	138,000	8,000
12	60	114,000	4,600
13	120	125,000	3,400
14 dil. 1/100	0	12,000	4,000
15	4,800	2,369,000	21,000
16	40	16,000	12,750
17	160	1,118,000	19,000
18	6,900	1,449,000	11,000
19	140	24,600	9,000
20	80	13,600	14,000
Minimum	0	12,000	3,400
Maximum	6,900	2,262,000	28,000
Average	1,020	471,414	12,422

MIXED HERD (20 Cows)—EXPERIMENT NO. 1.

After 3 Hr. at Room Temp. Bact. per c.c.	After 20 Hr. at Room Temp. Bact. per c.c.	After 20 Hr. at Temp. 11° c. Bact. per c.c.	B. Coli
59,000	114,000,000	92,000	Present

MIXED HERD (20 Cows)—EXPERIMENT NO. 3.

After 3 Hr. at Room Temp. Bact. per c.c.	After 20 Hr. at Room Temp. Bact. per c.c.	After 20 Hr. at Temp. 11° c. Bact. per c.c.	B. Coli
6,790	1,260,000	22,000	None

From the foregoing obtained results, and from observations of numerous investigators, it is evident that the high number of bacteria found in milk is due to external contamination or because of its age.

The well-known phenomenon of germicidal properties of milk studied by Park,[4] Conn,[5] Hunziker,[6] Rosenau and McCoy[7] and others has been almost universally recognized, and it is expected that milk delivered from seven to eight hours after it is drawn should have a decrease in their number, and, by keeping same on ice, germicidal properties are much more prolonged; consequently, when the number of bacteria after eight to ten hours is high, it undoubtedly is an indication that the initial introduction of the bacteria was enormous or the milk is old, which also could be remedied by using sufficient cold.

With stringent precautions as regards cleanliness and modern appliances in handling, milk can be obtained with practically a very low number of bacteria.

When the cows are in surroundings of filth, dairy not in sanitary condition, where supervision is poor, and incompetent milkers—namely, indifferent to the elementary principles of observing sanitation while milking—are employed, water contaminated, utensils not taken care of, numerous

bacteria will be found in the milk as soon as same is drawn.

When the cows are cleaned, udders washed, surroundings favorable, milkers more or less intelligent, and management assumes the responsibility, realizing that milk could serve as an excellent disease-transmitting agent, sufficient cold applied, the result is clean milk; in other words, a minimum introduction of bacteria and less multiplication of same, as seen from the results of Series No. 3 and those of Series No. 1.

It seems to the writer that a bacterial count of milk is one of the most valuable aids in forming a comparative idea as to the sanitary condition of the different sources of the milk supply, and it is one of the subjects which is attracting attention among bacteriologists and public health officers, as seen from the standards adopted by many municipal governments.

The criticism as to the inconsistency of standards relative to the maximum number of bacteria to be found in milk is based:

1st. That milk is an excellent culture media for the growth of bacteria and their multiplication; consequently, the number of bacteria do not speak for its sanitary condition.

2d. That the bacteria found in milk are of a harmless variety.

In the first place, inasmuch as having established the fact that the high number of bacteria is due to the unsanitary condition of the dairies, then, even assuming that a given supply is free from dangerous contamination, it also is natural to believe that sooner or later the supply might serve as one most dangerous to health.

The well-known outbreaks of typhoid fever, scarlet fever, diphtheria, tuberculosis, and sore throat, which have been traced to the using of milk from sources where sanitary conditions were neglected, go to prove that milk with a high bacterial count is not fit to be used.

In the second place, the writer agrees and is thoroughly convinced that a hundred c. c. of milk containing one typhoid bacillus would prove more dangerous to health than millions of ordinary bacteria were found in one c. c. At the same time it is worth while realizing that even the saprophytic bacteria, under favorable conditions by their rapid multiplication and the production of their metabolic substances into the system, will occasion morbid conditions, hence so many digestive troubles, sicknesses, and the high mortality amongst infants.

Because of the above mentioned, milk with a high number of bacteria is not fit for human consumption, and it seems that the conception as to the value of the bacterial standards must be modified somewhat.

Bacterial standards based on scientific investigations adapted to the conditions of the different localities are the only best guaranty in preventing a given commonwealth from using unclean milk. The maximum number of bacteria that are to be found in milk can be brought to a specified standard, adopted only by using strict, vigorous methods as to sanitation, and it should be the aim of the health institutions to secure enactments putting the same into practice.

In conclusion, I wish to say that the practical methods of hygiene and sanitation used by Dr. A. E. Osborne, Medical Superintendent, Napa State Hospital—to whom I owe my sincere thanks—suggested to me the idea of this undertaking.

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HEREDITARY PIGMENTED NEVUS?

By ALBERT SOILAND, M. D., Los Angeles.

The patient, Mrs. M., age 32, healthy and well nourished, has a very fair skin, brown eyes and abundant straight yelow hair.

She gives a history which throws no light upon the causative factors responsible for the peculiar symmetrical pigmentation around eyes and upper part of face, as shown in plate No. 1. No member of family has ever been marked in this manner,

and patient was entirely free from blemish during childhood.

Pigmentation began when she was twenty years old, became rapidly dark, and was a source of much embarrassment. Recourse was had to local applications, and cauterants of various kinds, without benefit.

Saw patient in consultation February, 1911, and found her as depicted, pigmented areas black, non-inflammatory, and no change in color upon pressure. Decided to employ the Roentgen-rays, which

were accordingly pushed to induce a rapid superficial radio-dermatitis, during a period of one month's duration.

The patient at present is free from blemish, and it is fair to assume that the treatment has been successful.

Although patient specifically denies any ethiopian taint, the facial characteristics strongly justify the conclusion of hereditary pigmentation, or a fragmentary reversion to type.

A CASE OF COMPLETE TRANSPOSITION OF THE VISCERA.*

By FAYETTE WATT BIRTCH, M. D., San Francisco.

The following case of complete transposition of the viscera was seen in the practice of Dr. Lemuel Francis Jones and it is due to his courtesy that I am permitted to call it to your attention.

The patient, Mr. R.; age 22; German; salesman by occupation.

Family history: No history of twins in the family, no congenital mal-developments in any of his relatives. Mother, father, two sisters and one brother dead with tuberculosis.

Past history: Had pneumonia at seven years of age. Two attacks of typhoid fever, the last three years ago. Was operated upon for exploded appendix in May, 1912. The operator reports the following history of the case: The patient came under the care of Dr. Jones May 7, 1912, and stated that on the evening of May 6th he had generalized pain in the abdomen accompanied with nausea and vomiting. Examination disclosed localized pain, tenderness, and rigidity in the lower left quadrant. The abdomen was then quite distended and no normal liver dullness could be demonstrated. The temperature was 101.6°; pulse 112, thready but regular; respirations 32; leukocytes 19,000; polymorphonuclears 95%.

Diagnosis: Probable perforated appendix with spreading peritonitis. On account of the location of the pain and tenderness a long appendix extending well over to the left side or a transposed appendix was considered. A careful examination of the heart was not made at this time, and its true position was overlooked until the operator was informed by the anesthetist that the patient's heart was transposed.

Operation: Vertical incision was made just to the right of the median line. When the peritoneum was opened the abdominal cavity was found filled with thin purulent fluid. The sigmoid was observed descending from the right, the cecum and the appendix on the left. The cecum was delivered into the wound and the appendix removed in the usual manner. The wound was closed with drainage. The patient made an uneventful recovery.

A physical examination of this patient made in June, 1912, by the ordinary methods and confirmed by X-ray pictures of the chest and bismuth X-ray pictures of the stomach and the intestines showed the following anatomical arrangement of the viscera: The heart was found to be on the right side with apex in the fifth right intercostal space just inside of the nipple; the liver was on the left side; the greater curvature of the stomach extended to the right with the pylorus ending just to the left of the spinal column; the cecum in the left iliac region; the sigmoid continuing down into the rectum from the right side; the right testicle lower than the left.

In reviewing the reported cases of transposition of the viscera, the following points thus obtained may be of interest: The etiology of this condition is obscure. It has been advanced that transposition can be accounted for by the individual being one of a monochorial twin pregnancy; that is, one derived from a longitudinal division of a single ovum; the individual in fact being a complete reflection of a twin brother. In case of a negative history of twin pregnancy it is considered that the other individual becomes a fetus acardiacus. Others have laid the cause at the door of heredity, of blood relationship in parents, of acute illnesses of the mother, of fright in early pregnancy, and of early fetal diseases. Probably the best theory thus far advanced is that the main current of blood to or from the germinal area becomes diverted at an early period, and thus purely mechanical influences lead the vessels of one side of the organism to receive more blood and therefore to grow more vigorously than those of the other. It is clear, however, that these many hypotheses have far from clarified the subject.

With our present knowledge of the subject it seems appropriate to draw the following conclusions:

First, transposition of the viscera is uncommon without dextracardia.

Second, transposition of the testicles with dextracardia without transposition of the viscera, so far as I have been able to learn, has not been recorded.

Third, with transposition of the viscera additional malformations and malpositions are frequently encountered; as congenital cardiac disease, persistent thymus, harelip, cleft palate, etc.

Fourth, in a case showing symptoms of left-sided appendicitis or left-sided gall bladder disease, the suspicion can at once be confirmed by finding the heart and testicles transposed and thus avoid the mistake of making the wrong incision, as was done in this case and in a similar case reported by Mr. Moynihan.

Fifth, if time and circumstances permit a fluroscopic examination or X-ray plates will show the true anatomical conditions.

* Read at the meeting of the Section on Surgery of the San Francisco County Medical Society, August 20th, 1912.

REPORT OF A CASE OF PYEMIA.

By W. B. COFFEY, M. D., and W. T. CUMMINS, M. D., San Francisco.

J. R. S., age 27, American, brakeman, was admitted to Southern Pacific General Hospital, Feb. 14, 1912. Family history negative. Previous history: Usual diseases of childhood except scarlet

fever. Denies venereal history. For the past two or three years has had attacks of pain in both shoulders. Mother states that when he was five years old he had "lung trouble." His present condition dates from February 10, when he first noted tenderness, pain and swelling of right knee. For some time prior to this he had had an abrasion of the right index finger in which evidences of infection had appeared but this was almost entirely healed when the patient entered the hospital. Then the knee symptoms had materially increased in severity.

Examination: Poorly nourished adult, toxic in appearance. Eyes normal. Skin clear, tongue coated. Pulse rapid but of good quality. Respiration normal. Thorax and abdomen normal. Right knee swollen, very tender and slightly reddened. Some venous dilatation present. Deep fluctuation can be elicited. Joint flexed.

The knee was opened and drainage effected under cocain on February 17. The general therapeusis was symptomatic in character. Two days after operation 2 cc. of a stock vaccine containing staphylococci, streptococci and pneumococci were administered intravenously and this was given daily for two weeks, the maximum dose being 6 cc. The temperature maintained a "hectic type" ranging from 97° to 105°, the latter being reached after the first vaccine dose. The pulse ranged from 86 to 152 and the respirations from 24 to 44.

A blood culture was made on February 16, the technic consisting of 2 cc. of blood in 100 cc. of neutral, extract broth, several flasks being used. This was repeated on February 24. In both, the organism obtained had the morphological and cultural characteristics of the staphylococcus aureus. Cultures and smears were made from the joint fluid at operation and the above-mentioned organism was found.

Urinalyses: 1. Feb. 14. Clear amber. Sp. gr. 1038, acid, trace of albumin, no sugar. Many hyaline and a few granular casts. 2. Feb. 20, dark, turbid, amber. Sp. gr. 1038, acid, trace of albumin, no sugar. Many hyaline and a few granular casts. Many leukocytes.

Von Pirquet reaction was negative.

The following leukocyte counts were made at one and two day intervals, and are indicated in chronological sequence: 15,600 (Feb. 14); 17,000; 18,500; 21,000; 16,000; 20,500; 24,600; 19,000; 17,000; 21,000; 16,800; 17,500; 16,400; 15,000; 17,800; 14,000; 14,500; 11,000 (March 7). Leukocyte counts were made one hour before and one hour after each of five inoculations, as follows:

Dates	Totals	% Neutrophiles	% Lymphocytes	% Large Mononuclears	% Transitionals	% Eosinophiles	% Basophiles
Feb. 23 (before)	20,500	75	20	2	2	1	0
(after)	26,000	64	21	6	4	4	1
Feb. 26 (before)	17,400	68.5	22.5	6	1	1.5	0.5
(after)	28,000	59	21	8	8	4	0
Feb. 29 (before)	16,800	66	23	4.5	3.5	2.5	0.5
(after)	24,000	59.5	25	6	5	3	1.5
Mar. 1 (before)	17,500	69	20	5	3	2	1
(after)	24,600	61	18.5	8	5	6	1.5
Mar. 3 (before)	15,000	64	26	3	4	3	0
(after)	20,400	51.5	34	8	1	3	2.5

It is noted from the above table that each vaccine inoculation was followed by an increase in the total number of leukocytes coincidently with which there was a decrease in neutrophiles and an increase in the other types. All counts made by Dr. Ernst, Interne.

Throughout the course of the disease marked diaphoresis was noted. On February 19, five days after admission, a little bloody sputum was expectorated. The following day thoracic pains developed, while the arthritic pains had become severe. On March 3, he developed a severe conjunctivitis of both eyes followed within twenty-four hours by loss of sight in the right eye. Marked edema of the lids then appeared so that the eye was almost closed. He then complained of pains in one of the toes on the left foot. Several small superficial abscesses developed over the body. During this time the cough became severe and the blood-tinged, purulent sputum increased in quantity. The other knee began to show signs of involvement and operation became necessary. Abdominal examination was negative. The patient complained bitterly of pain when efforts were made to move him. Restlessness increased and breathing became more labored. Death occurred on March 8.

Clinical diagnosis. Suppurative synovitis of knees; pyemia.

Autopsy Report. Moderately emaciated, jaundiced subject. Both knees showed evidence of operation and in the right, drainage. Both eyes showed marked conjuctivitis and moderate edema. No eruption, scars, bruises, nor bed sores. Peritoneum smooth, moist and pale. No excess of fluid. There were two small hemorrhagic areas on serous surface of ileum. Liver was bound to diaphragm by dense adhesions. Position of abdominal organs normal except for transverse colon which was moderately ptosed. Diaphragm showed a split-pea sized abscess on the right pleural surface. Spleen weighed 275 grams and measured 14 x 9 x 3 cm. Externally it was generally dark red except for a small pale area of apparent capsular thickening. Upon incising numerous, soft, yellowish areas 1-10 mm. in diameter containing pus. Pulp dark red and very soft. Follicles and trabeculae indistinct. The above-mentioned, pale, capsular area was composed of numerous, closely aggregated abscesses. (Cultures from spleen.) Liver weighed 1760 grams and measured 25 x 20 x 5 cm. Externally color brownish red. Incision showed markings of "nut-meg" and a diffuse yellow coloration. There appeared one small (1 mm.) yellowish white area just beneath capsule. Gall bladder large and filled with thin, yellowish green bile without evidence of calculi nor catarrhal change. Stomach apparently normal. Intestines apparently normal except for the two small hemorrhagic areas in ileum. Appendix 3 cm. in length and apparently normal. Pancreas weighed 85 grams and measured 15 x 3.5 x 1 cm. Apparently normal except for a slight yellow coloration. Left kidney weighed 325 grams and measured 13.5 x 6 x 4 cm. It was dark red, soft and flabby. Incision showed in the cortex and medulla many yellowish white, soft areas, 1-5 mm. in diameter, containing pus. These were so numerous that cortex and medulla could not be defined. Pelvis normal. Ureter normal. Adrenal not examined. Right kidney weighed 325 grams and measured 15 x 8 x 4 cm. It was identical with the left. Ureter normal. Adrenal soft and dark red. Bladder apparently normal. Generative organs not examined.

Left pleural sac showed recent adhesions over lower lobe. No excess of fluid. Lung weighed 920 grams and measured 23 x 18 x 6 cm. Over pleural surface there were numerous pale, elevated areas averaging about the size of a soup bean. These gave to the moderately anthracotic tissues a mottled appearance. Upon incising these were found to contain pus. Interior of organ showed numerous similar areas, the largest of which was 2 cm. in diameter. Some of these were filled with thin pus, while others had a cheesy consistency.

The smallest resembled tubercles, while some of the largest looked not unlike acutely developing cavities in tuberculosis. Otherwise the tissues were boggy and upon pressure much frothy, blood-stained fluid exuded. Right pleural sac showed many recent adhesions. No excess of fluid. Lung weighed 760 grams and measured 20 x 12 x 5 cm. Tissues resembled opposite organ. Pericardial sac contained a moderate excess of clear, yellow fluid. No adhesions.

Heart weighed 310 grams and measured 14 x 9 x 4 cm. Small amount of pericardial fat. Coronary vessels tortuous but apparently not sclerosed. At apex of left ventricle there were several small (2 mm.) yellowish, somewhat elevated areas containing pus. Near muscular insertion of one of the mitral chordae tendineae there was a small purulent area and another reflected through the endocardium of the right ventricle just below the tricuspid valve. Muscle dark red and flabby. Valves normal. (Cultures taken from heart's blood.) Aortic arch showed several yellowish, elevated plaques. Superficial lymph nodes not enlarged. Bronchial nodes anthracotic and apparently not tuberculous. Neither brain nor spinal cord examined, permission for a complete autopsy not having been obtained.

Histological examination. Lungs: Moderate fibrosis and congestion of pleura. Considerable congestion and edema of the alveolar tissues. Moderate anthracosis. There were several masses composed of polynuclear leukocytes and surrounding zone of young connective tissue cells and much engorged vessels. No evidences of tuberculosis.

Heart: Moderate congestion of epicardium and subepicardial tissues, while the myocardium was markedly congested. There was one area in the subepicardial tissues composed of polynuclear leukocytes (resembling above-described areas) and much of the adjacent muscular tissue was infiltrated with these cells. The muscle cells showed segmentation.

Spleen: The pulp was markedly congested. Malpighian corpuscles were indistinct. A few areas of polynuclear cell collections. There was no evidence of amyloid change.

Pancreas: There was a moderate general fibrosis.

Kidneys: Cortical epithelium showed marked degenerative changes (cloudy swelling and fatty change). Many tubules were stripped of epithelium. In cortex and medulla there were numerous large and small areas composed of polynuclear leukocytes together with masses of bacteria, evidently cocci. In cortex there were areas of connective tissue proliferation. Considerable hyperemia present.

Bronchial lymph nodes: Moderate congestion and anthracocis. Several blood vessels contained bacterial masses, evidently cocci.

Pathologic diagnosis. Chronic pleuritis; abscesses, congestion and edema of lungs; abscesses of heart and segmentation of the parenchyma; abscesses and congestion of spleen; chronic perihepatitis and cloudy swelling of liver; chronic interstitial pancreatitis; abscesses and subacute parenchymatous nephritis; congestion and bacterial embolism of bronchial lymph nodes; abscess of diaphragm; multiple suppurative arthritis (knees)—pyemia.

Bacteriologic diagnosis. Staphylococcus pyogenes aureus from heart's blood and spleen.

Remarks. It is not improbable that the primary suppurative focus was located in the finger, although the infection was superficial and of short duration. There was no history of traumatic influence to bring to bear upon the involvement of the right knee and it seems likely that this was secondary to a blood infection (septicemia). Upon admission the patient was evidently more toxic than the joint condition itself would produce. Two days after admission the staphylococcus aureus was isolated in blood cultures and the result was confirmed by another blood culture eight days later, as well as cultures and smears from the knee and cultures from the heart's blood and spleen at autopsy. The extensive abscess development in the lung and kidney tissues is of interest, as well as the eye lesions which are suggestive of orbital thrombosis.

DISCUSSION ON THE SYMPOSIUM ON POLIOMYELITIS, PRESENTED AT THE MEETING OF THE STATE SOCIETY IN APRIL AND ACCIDENTALLY OMITTED FROM THE OCTOBER JOURNAL.

Dr. W. V. Brem, Los Angeles: As the papers were being read it occurred to me that my experience in Panama with the use of hexamethylenamin in cases of suppurative meningitis might be of interest. The first patient came into the hospital with malarial fever and developed meningococcus meningitis about the fourth day after his admission. We began treating him at once with large doses of the drug and were able to demonstrate it in the spinal fluid in 1 to 20,000 dilution by Hehrner's test. The patient had an extremely acute attack and we anticipated a rapidly fatal termination. As it was he lived 25 days and we felt that the treatment with hexamethylenamin might have prolonged his life. The second case was one of influenzal meningitis and at first suggested poliomyelitis. We were unable to differentiate between them before making the lumbar puncture. This patient was a child 18 months of age. We gave hexamethylenamin in 10 grain doses every four hours. We demonstrated the drug in the spinal fluid with ease but the child showed no response to the treatment and died in a few days. A third case was another of influenzal meningitis and at first treatment with hexamethylenamin in 10 grain doses every four hours (hypodermically). Hexamethylenamin was demonstrated in the spinal fluid in about 1 to 4000 dilution. Finally we introduced a needle into the spinal canal and kept it there for 24 hours. When this was done the temperature dropped to normal and stayed normal for 24 hours. It rose again, however, and on examination we discovered that the point of the needle had worked out and the drainage had stopped. The drainage was good for a short time as was shown by the dressings which were soaked with fluid. If we had kept it in continuously I do not believe it would have saved the patient's life because the child was moribund at the time. However, the fall in temperature during drainage suggested to my mind that urotropin might have but little effect unless accompanied by drainage. This idea may find some support in the fact that in typhoid cholestitis hexamethylenamin will cause a disappearance of typhoid bacilli quite rapidly after cholecystostomy but in cases of intestinal typhoid carriers with presumably an infection of the gall bladder it is powerless to eradicate the infection. Following out this line of thought we tried to treat a patient with pneumococcus meningitis by laminectomy. The laminectomy was made in the lumbar region which was a mistake for it should have been higher up to secure good drainage. The patient died about 4 hours after the operation and at autopsy a malignant endocarditis which we had not discovered in life was found. The case was not, therefore, of experimental value. Such a daring procedure could be tried only in a desperate condition like pneumococcus meningitis and would not be justifiable in poliomyelitis. But a needle

might be introduced and permanent drainage established through it, a special canula which can be held in the spinal canal has been devised by Rosenthal. He refers to a case of suppurative meningitis treated by Gorse who kept the canula in for 13 days. The patient recovered.

Dr. S. J. Hunkin, San Francisco: We have had 76 cases of poliomyelitis during the last year and 20% of them absolutely recovered—so it is a disease which tends often to recovery under proper surgical care. These were not abortive cases but cases of total paralysis regarding some particular portion of the body, yet 20% made absolute recovery that will pass examination of a board of medical men. Whether the future will show some atrophy in these cases I cannot say. This disease shows a strong tendency toward recovery. I have been greatly struck during the past two years with the amount of pain present in the cases, compared with what there was many years ago. Years ago pain was a very uncommon symptom in my experience. During the last two or three years pain has become a very prominent symptom. In no case that we handled had the diagnosis been made until the paralysis had occurred. The history of these cases taken in my office and in the clinic showed that practically every case should have had the diagnosis made one or two or three days before the paralysis appeared. The histories showed this very conclusively. That we had a big epidemic here there can be no doubt. During 1901, however, my records showed 34 cases and I think 34 cases bears about the proportion to the work I had at that time to what I now have. So I think we must have had about as big an epidemic at that time as during the last epidemic. So far as I remember we did not have the amount of pain recorded that we have had the last two years. Neither did it attack in my experience people so old. During the last year we have had many adult cases. I have had at least 12 cases over 20 years of age, so that the disease has become a disease not alone of children but in a growing proportion a disease of adults. The surgical procedure necessary to obtain this 20% recovery should begin immediately the paralysis occurs, otherwise, to the paralysis of poliomyelitis is added the paralysis of overstretching with the resultant deformity. That paralysis is hardly secondary to the paralysis of the poliomyelitis. That is, a muscle which has been continuously stretched out two or three inches longer than it should be is paralyzed just as completely as those from the original poliomyelitis and showing as little tendency to recovery so long as the stretching persists. Surgeons often try to stretch a muscle to make paralysis as in anal tissue, and he knows that extreme stretching is immediately followed by a paralysis, yet generally speaking, the profession allows practically the same thing to occur ordinarily in poliomyelitis paralysis, with, of course, the same result as when he deliberately overstretches a muscle. Practically every case coming to us has had more or less deformity lasting years and no small amount of the paralysis present, the result of overstretching. So that in order to favor a recovery the deformity must be prevented from the first and if possible the limb should be kept in a position of even balance if paralysis is absolute and in slight over-correction, if only one group is paralyzed. It is wise—it is necessary that from the very day that the paralysis occurs that the limb shall be placed in a position of absolute rest. No muscle should be permitted to be stretched, but the limb should be put and kept in a position of absolute rest and even balance. It is not necessary to massage it—not necessary to apply electricity, but it is essential to secure absolute rest. I am in the habit of putting these limbs into plaster of paris. The results following absolute rest of these muscles is easily demonstrated as the best aid to recovery we have. In the matter of muscle transference—in the last 10 years we have had nearly 1700 instances, although not in 1700 cases, and the technic pursued by us is a little different than that urged by others. I do not think it is necessary to operate as early as has been advocated. It is not wise in my opinion to operate inside of two years. The oftener you operate inside of a two-year limit the more often in the years to come you will be sorry, and mayhap will have to reoperate to undo some of the things you had done. At the end of one year you cannot tell what to transplant or where to transplant it. Since I have put the two-year limit on my work I have had better results. Then again the technic of putting in silk has improved. I think we have a better suture than that spoken of by the reader. I think it is a little puerile to do as I have seen Lange do—take a piece of silk for a tendon and tie 5 or 6 knots, one on top of the other, and then flatten out a crude, clumsy lump. I think almost any man can tie knots smoothly and flat without such a procedure if he studies any work on knots. Any sailor will show you how to do it in a workmanlike, safe manner.

Dr. D'Arcy Power, San Francisco: It seems possible that there were therapeutical possibilities in this case worth discussing. It will be noticed that in Dr. Williams' third case respiratory failure occurred while the heart was still in good condition and that death did not take place until several centers had been effectively affected. Furthermore, I note that the lower cord centers had been attacked and recovered before the respiratory failed and that it is believable that the same would have occurred with the respiratory center, had sufficient time been available. I do not know whether it is practically possible, but it seems as though it might be possible to use intratracheal respiration in such a case and so maintain life for two or three days and I think that in future instances an attempt ought to be made in this direction, particularly as there was ample time for its careful installation.

Dr. Carl G. Wilson, Palo Alto: In the last two years I have had six cases of poliomyelitis. In regard to the treatment of these cases I used urotropin 7½ grains every two hours up to saturation—indicated by the bladder symptoms. One was cerebral, one cerebral bulbar and the other four were all spinal types. Even before making a positive diagnosis I began early with the treatment. The result was that the paralysis in one case in one leg cleared at the expiration of about eight months. There was paralysis of both lower extremities in one case improving very slowly. The other four made entire recovery. The worst case looked as if it would succumb, all symptoms beginning to show involvement around the medulla and the case looked almost hopeless for a short time. This case, however, made an entire recovery. One of these cases was abortive of spinal type. The symptoms lasted 48 hours and then entirely cleared. The suggestion which I wish to make is a subarachnoid injection of a drug which is known to be destructive to the germ and not detrimental to nerve tissue. Flexner states that permanganate of potash, peroxide of hydrogen and menthol will very quickly destroy the germ. I would suggest a 1% solution of menthol injected into the subarachnoid space in the early stage of the disease. As a prophylactic in these cases the use of peroxide of hydrogen or menthol sprayed in the nose and throat is one of the simplest and best known at the present time. Flexner claims that the principal mode of infection is through the nose and throat.

Dr. J. L. Milton, Oakland: With regard to the silk this is a very important matter and should be prepared by the method Dr. Watkins spoke of. It should be boiled in bichloride and thoroughly dried and later boiled one hour in paraffin. This has given the best results and does not cause any irri-

tation whatever. Most of the other methods tried have drawbacks. The silk prepared by this method does not give any trouble. Aside from transplanting the tendon one can sometimes make a stay or brace with silk from the periosteum of the leg through some of the bones in the foot. If we had the tibialis paralyzed one could put a silk stay from the tibia to the internal cuneiform bone, planting at both ends the suture in the periosteum. That serves to hold the foot in position and acts very well to prevent deformity. In all operations it is absolutely necessary to over-correct your deformity. This helps in several ways. We all know that many of these muscles are only partially paralyzed and weakened on account of the position of the foot. Over-correcting this allows new life to come back and that taken with transplantation helps it very well. With regard to the time of operation, as Dr. Watkins says, one year is the time to begin and that is pretty hard to determine. Certainly I should not operate under one year after the onset of the paralysis. I am at present treating a case paralyzed 1½ years ago which is still improving and probably will improve for some time yet. When to operate is pretty hard to tell but certainly not under a year. Sometimes bone operations coupled with muscle implantation can be done to good advantage and I have known several instances in which that works very nicely. Suppose there were calcaneous deformities, calf-muscles paralyzed, one can remove the astragalus and push the leg forward on the foot and give a good, solid foundation and one can get along without the need of a brace afterward. Another bone operation works out where the quadriceps is paralyzed and we want to transplant the biceps—and that is to do an osteotomy in the femur making a backward bend best above the knee and allow the patient to stand on the leg and this gives the transplanted muscles better chance to work.

Dr. R. L. Wilbur, closing: Dr. Hunkin's discussion has shown us that there are many cases of this disease constantly occurring. The principal object in bringing my paper before you was to emphasize the importance of early diagnosis for the protection of the individual and the community and to encourage early rest and proper care, in the hope that as time goes on the consequences of the disease may be avoided in the individual and the spread of it controlled in the community.

Dr. J. T. Watkins, closing: I presaged my paper by saying that it must necessarily be incomplete. Still I tried to get in all I could on this subject in the time allotted to me. The members of the Alameda County Medical Society will remember that I read a paper before them on infantile paralysis and not being limited for time I made the same contention that the doctor has as to the importance of protecting the joints during and after an attack of infantile paralysis. Lange has emphasized that. With regard to the manner of attaching the silk tendon, the point is to attach it in such a way that it will hold. The manner of attachment may vary with the individual. I have no objections, of course, to Dr. Hunkin's nautical knots. As to the best time to operate please note that I specifically said if you can control the conditions surrounding your patient one year after beginning a systematic protracted conservative treatment is the inside limit. I have not thus far had to undo anything I had done in an operative way. I do not think such an eventuality will arise if the operation plan is prepared properly. So far as silk ligaments are concerned I did not have time to speak at length of them in the abstract of my paper. You will find them considered somewhat fully in the published paper, however. It gives me pleasure to say that I thoroughly agree with the procedure of which Dr. Milton spoke.

SOCIETY REPORTS

CALIFORNIA ACADEMY OF MEDICINE.

The California Academy of Medicine held its regular meeting on Monday evening, September 23rd, in the rooms of the County Medical Society.

The following scientific program was given:

1. (A) A Suggestion in the Surgical Treatment of Tic Douloureux of the Inferior Dental Nerve.

(B) Treatment of Oblique Spiral Fractures of the Tibia. Charles G. Levison. Discussed by R. L. Wilbur, Sol. Hyman, S. J. Hunkin and C. G. Levison.

2. Observations on the Anatomy of the New-Born. A. W. Meyer. Discussed by W. Ophuls, W. F. Schaller and A. W. Meyer.

W. F. Schaller and Jean V. Cooke were elected to membership.

Refreshments were served at the close of the meeting.

NEVADA STATE SOCIETY.

The annual meeting of the Nevada State Medical Society closed with a banquet on the night of October 9th. The meeting was an unusually good and well attended one. The newly-elected officers are as follows: President, M. R. Walker; Vice-President, A. P. Lewis; Second Vice-President, P. J. Mangan; Secretary, M. A. Robison; Delegate to the A. M. A., B. F. Cunningham; Alternate, M. A. Robison.

ORANGE COUNTY.

The meeting of the Orange County Medical Society for October was held at Santa Ana and the subject of Racial Betterment was the principal topic of discussion with strong resolutions on the proper control of marriage licenses as an outcome. A committee consisting of Drs. J. F. Doyle, H. A. Johnston and A. H. Domann was appointed to cooperate with other societies.

SAN JOAQUIN VALLEY SOCIETY.

The Thirty-third meeting of the San Joaquin Valley Medical Society was held at Merced, October 8th, under the genial guidance of Dr. Hildreth, its President. The program was as follows: Personal Experiences with Bacterines, by W. W. Cross; Epidemic Poliomyelitis, by Philip King Brown; Continued Report on Gall Bladder Sections, by T. C. Rosson; Report of a Case of Splenectomy, by H. Kylberg; The Future Outlook for the Medical Profession as Affected by Legislation, by J. H. Parkinson. In the evening a banquet was tendered to all those in attendance by the physicians of Merced.

SANTA CRUZ COUNTY.

The September meeting of the Santa Cruz County Medical Society was held at the office of Dr. E. E. Porter at Watsonville and was largely attended. Matters of business interest, illegal practitioners, etc., were largely discussed.

SONOMA COUNTY.

The Sonoma County Medical Society held its meeting for October on the afternoon of the 10th at the State Hospital at Eldridge, where the meeting was in the nature of a clinical one, followed by refreshments and a social session.

BOOK REVIEWS

Elementary Bacteriological and Protozoology: the Microbiological Causes of the Infectious Diseases. By Herbert Fox., M. D., Director of the William Pepper Laboratory of Clinical Medicine in the University of Pennsylvania. 12mo, 237 pages, with 67 engravings and 5 colored plates. Cloth, $1.75, net. Lea & Febiger, Philadelphia and New York, 1912.

As the author's preface states this is a work for

the nurse and the beginner. It would be well to add for the layman and high school student, for it is certainly elementary enough to be of real service. H. R. O.

The Collected Works of Christian Fenger. Vol. I and II. 1840-1902. Saunders Company, Phila. 1912.

These two volumes include the English and Danish publications of Dr. Fenger. The latter are translated. One article alone, written during his residence in Cairo, is in French. The large range of topics covered testifies as to the wide interests of the great Danish-American surgeon. The papers on genito-urinary subjects are particularly valuable. Many surgical principles set forth on this as well as on other topics have since the time of publication been universally adopted. Not the least valuable is a most interesting autobiography telling of a career full of obstacles and opposition but through which, as these works testify, his love of progressive scientific medicine must have remained undiminished. H. C. N.

Practical Anatomy. A Guide to the Dissection of the Human Body. By John C. Heisler, M. D., Professor of Anatomy in the Medico-Chirurgical College of Philadelphia, Pa. Pp., 790, with 366 illustrations, of which 225 are in color. Price, $4.50.

This book is a treatise on dissection and gross anatomy from a topographical point of view. The author has included under the title Practical Anatomy, not only useful facts applicable to dissection and descriptive anatomy, but also those relating to medicine, surgery, and the various specialties,—the latter being what are preferably comprehended under the name of applied anatomy. The points of clinical interest are abundant and concisely presented.

In the preface the author gives his reasons for the character of the work and for the particular arrangement of the subject matter. A warning is given that the "work in no sense attempts to usurp the function of a text-book of descriptive anatomy."

The cadaver is divided into four "parts" and it logically follows that four chapters should be devoted to the consideration of the essential anatomical and practical facts. An introduction is set apart to the technic of dissection. The instructions given will be appreciated by the student who works on his own initiative. Seven photographic illustrations are given to elucidate the text.

In each chapter the regions of the part of the body under consideration are taken up in a rational succession and the details of each are presented in the order of dissection. An effort has been made to preserve the logical arrangement of the subject and it is expected that the order of the work will be varied in each individual case, according to the requirements and object in view. The presentation of the text matter permits freedom of choice on the part of the student.

It is recommended that before the dissection is undertaken a review be made of the salient characteristics of each bone involved in the region under contemplation. The bones are figured and properly lettered, and the areas of muscular attachment are indicated in color. A study of the surface anatomy—which includes surface form and landmarks—precedes the consideration of the dissection. Then follows, in the regular order of occurrence, the removal of the integument, superficial fascia, cleaning of the superficial vessels and nerves, deep fascia, finally the muscles and deep vessels and nerves. For each muscle the essential facts of origin, insertion, nerve-supply and action are considered. An analogous treatment is accorded the main arteries and veins; the important anastomoses formed by them receive attention. The most common variations are briefly mentioned. The joints, ligaments, bursae and synovial sheaths, lymphatics and the areas drained by them, receive the attention which their importance demands.

The practical importance of each anatomical fact has been interpolated at the proper time and place. Therefore, any point of special clinical interest is mentioned in connection with the structure under consideration. In order that "the beginner may not be unduly distracted, however, by an over-abundance of such references, they have been set apart from the body of the text by presentation in smaller type." It is the opinion of the reviewer that this segregation will all the more strongly fix the attention of the student upon the facts presented.

The figures have for the most part been made from the author's dissections or under his direct supervision. Many of them lack distinctness and the relationship of the structures are obscured by the colors not having fallen into their proper places. A few of the figures are disappointing as to correctness. In figure 24 the medial anterior thoracic nerve should have been indicated so as to have been compared with the lateral anterior thoracic.

In figure 27 the lateral cutaneous branch or intercostobrachial nerve from the third intercostal nerve is made to pass beneath the subscapular artery. This same relation is shown in figure 1093 of Piersol's Anatomy. Most text-books are obscure on the relationship of this nerve. Figure 67 of Woolsey's Applied Surgical Anatomy gives the relations of the intercostobrachial nerves correctly and as observed by the reviewer in his dissections and class work. A very obvious error is committed in figure 81, where the posterior cutaneous nerve of the thigh (small sciatic) is represented as lying superficial to the fascia lata in the upper and posterior part of the thigh. Again, in figure 163 the parotid duct is lettered as the buccal nerve, at least from the large size and position of the structure it is considered that an error has been permitted to go uncorrected. The genito-femoral nerve is colored red in figure 297.

It is true that an author finds it difficult to keep a work of the present character within desirable limits without omitting some important facts in the abridgment. Some omissions are less pardonable than others; an instance may be cited. On page 631, where the peritoneum is traced in a sagittal section of the body, no mention is made of its relation to the vagina. It would have been much better to have stated that the peritoneum is reflected from the anterior surface of the rectum onto the upper and posterior fourth of that organ, before attaining the posterior surface of the uterus. At this particular time such an omission is apt to lead the student into error. The correct relations are given on page 711.

Although the Basle Anatomical Nomenclature has not been adopted in its entirety, it is very gratifying to find the "BNA terms used directly in many cases," and the only regret is, that they have not been more extensively adopted; especially for such structures as the axillary, radial, and femoral nerves, etc., and the old terms circumflex, musculospiral, and anterior crural nerves, etc., given in parentheses. In the interest of advancement this should have been done. All progressive and up to date students or physicians would have accepted the new order of things, and the book itself would have a greater value in teaching.

The typography is excellent. The subheadings are given in heavy black-faced type, so that they are recognizable at a glance. The publishers deserve credit for the neatness of the book and for the elimination of typographical errors, for none of any moment have been noted except those pertaining to the figures.

The book in its logical arrangement and concise statement of facts should find a useful place within the sphere for which the author intended it.

F. E. B.

NEWS NOTES FROM NEWSPAPERS.

The Dr. Rowell Memorial Fund now amounts to over $6,000.

Turlock is to have a new Sacred Heart hospital; the plans are now being drawn.

Poliomyelitis to the extent of six cases had been noted in Sacramento up to October 4th.

California's sanitation car was sent East and exhibited at the recent Congress in Washington.

In Alameda, a schoolboy who was bitten by a dog on September 13th developed hydrophobia.

Los Angeles, it is said, is to have a $500,000 hospital for the wives and children of Foresters.

Rabies in a cat from the vicinity of Fresno has recently been determined by the State Laboratory.

The State Asylums are, according to Dr. John R. Haynes, all in a deplorably overcrowded condition.

Dr. Howard C. Nafzigger has gone East to connect himself with Harvard University under Cushing.

Smallpox victims to the number of six are in quarantine at Stockton; but let us have no vaccination.

Since 1904 some 300,000 Porto Ricans have been cured of hookworm disease, according to recent reports.

Bakersfield is to have a Mercy hospital at no distant date; Bishop Conaty has authorized its construction.

Dr. N. A. Robison, Secretary of the Nevada State Society, was recently thrown from a horse and had three ribs broken.

Cholera is epidemic in Japan, at Yokohama, and extra precautions in inspection of ships from there have been ordered.

San Leandro is to have a $50,000 nurses' home added to the Merritt Hospital; work was begun upon it in September.

The McNutt Hospital, San Francisco, was brought into court October 1st on a petition to have the hospital adjudged bankrupt.

Tuberculosis Sunday, October 27th, was very successful; the general subject taken up was an exposure of tuberculosis "cures."

Stockton inspection of school children is promising; Dr. Goodman reports 42 cases of pediculosis out of 190 children examined.

At Napa a patient was fatally scalded by getting into a tub of very hot water. The attendant physicians were in no way to blame.

At Lodi a boy was recently bitten by a dog said to be rabid and was sent to Sacramento for treatment. But let us not muzzle the dogs!

Sacramento makes complaint that the physicians there are too lax in reporting contagious diseases. The same complaint comes from other quarters.

In Stockton, arrangements have been made between the school inspector, Dr. Goodman, and the dentists, to look after the bad teeth of poor school children.

Dr. W. F. Burke, who is now in San Quentin for attempting to blow up a woman and child some months ago, is having petitions circulated asking for a pardon.

"Prevention of Infectious Diseases" is the title of ten lectures before the Y. W. C. A. of San Francisco; five delivered in October and the others to be delivered in November.

Diphtheria was epidemic in the detention home at Los Angeles, in September, and some thirty-odd inmates had to be sent to the contagious diseases wards of the County Hospital.

The Los Angeles ball team has been reduced to nearly a wreck through an epidemic of typhoid among its members, which they seem to think was presented to them in Sacramento.

San Francisco is having a lot of trouble to get enough money out of the Supervisors to run its Board of Health; but it can spend $700,000 for a lot on which to erect an auditorium!

Fresno has started public municipal markets and the city health officer, Dr. Aiken, says that all sanitary regulations are strictly complied with. This should do something to help reduce the cost of high living.

Hospital associations in this State are badly in need of careful investigation, according to Dr. Leland, Coroner of San Francisco. An injured man was allowed to die while under the careless care of one of these concerns.

CAN THIS CIRCULAR BE A JOKE?

"There are a few diseases that baffle modern curative agents of all kinds. They can sometimes retard and keep them under some control so that it is late in life before they will cause death, and before that period in life has arrived another one, quick-acting sometimes, enters and death results, but in all cases the system is so weakened by the first that the second is much more destructive than if the first had not been present. The worst ones, of course, are leprosy, consumption, scrofula, syphillis, cancer, whose hold seems almost impossible to break, and are so prevalent as to threaten the destruction of mankind.

"For scrofula there is a very simple and sure cure. It will also eradicate venereal and rheumatism of some kinds, at least, from the system, as my personal knowledge of one case confirms, where four years' use nearly removed things physicians affirmed would be carried to the grave. Flesh, swollen hard, hard to dent and dents remain long after. Scars hard and raised with a gristly seam were after four years' use almost entirely removed. Skin became velvety to touch. Scrofula nodes nearly all removed by the simple process of throwing the urine into the bowsls.

"There is a prejudice against it, on the ground of uncleanliness, but that is a mistake, as there is no more connection between the bowels and kidneys than between the bowels and the lymphatic glands, which secrete milk, and one is just as cleanly as the other.

"Both are discharges from the blood, and even if it was not so, who would hesitate with health and life at stake?

"From my personal experience I believe it will cure any form of zamotic or bacterial disease that lodges within the human body, from the bacteria senile, the one that produces old age, to the ssleeping disease of Africa. A person must not use too much at first, but commence with what the stomach will stand without nauseating, as it seems to act on the bowels first, and besides too much is a lxative, but when one is used to it the whole will cause no trouble or inconvenience. Its action on the flesh in its first stage is accompanied with a slight soreness and an intense itching over a bone it is healing, but it will clear them of all nodes or lumps under the soft membrane and the bone will become smooth. It has good effect with the liver and a person using it would need no other medicine even in the tropics. From four years of use I am convinced there is no bacterial disease it will not cure or help, as all toxine serum is thrown back to do its work upon the germs that produced it. Piles or hemerhoids yield to it and rheumatism seems to be driven from the system.

"8he use of it for ten years gives time for all old flesh to be removed and new flesh formed. In other words, it is the fountain of youth.

"Use hot baths followed by cold. Bowel massage, drink lots of nature's medicine, live to a green old ange and die happy.

"In one case of a scrofulous or running ear, which was said to be impossible to cure, was cured absolutely and did not return.

"Don't be afrid of using too much, as it can do no harm, or it would have done so before it had left the body.

"I will not make a cent by this, but will be at a loss, so please give it a chance." J. W. S.

Los Angeles, Cal., and Sound View Ct.

DR. VON NOORDEN'S VISIT.

During October Dr. von. Noorden, Professor of Internal Medicine at the Imperial University of Vienna, visited California and had a rather busy time of it. On the 15th he addressed the San Francisco County Medical Society on the Modern Aspects of the Theory and Treatment of Diabetes; on the 18th he addressed the students at the University of California and on the same night was given a banquet by the County Medical Society at the Hotel St. Francis. He was also the guest of honor at many private dinners, etc.

WHAT IS MEMBERSHIP WORTH?

To the Editor of the State Journal:—I wish to write and thank the State Medical Society for the manner in which it looked after the defense of the malpractice suit brought against me, and recently tried. The defense undertaken by the Society was thorough and the whole profession should realize the necessity of having the Society back of them in these malpractice cases which any physician is liable to have brought against him in the course of his practice.

Very truly yours, (—. —.)

SOCIETY FOR THE PREVENTION OF BLINDNESS.

The Board of Directors, General Council, and members of "The California Society for the Prevention of Blindness" met together at the semi-annual luncheon of the Society on September 17, 1912, at the Hotel Stewart, San Francisco, to talk over its publicity campaign and the ways and means necessary to further the legislative action in California.

Dr. C. S. G. Nagel, president, in a cordial greeting, strongly urged those present to leave no avenue unopened that could lead to the ends desired.

Dr. Adelaide Brown followed in a strong appeal for the co-operation of the medical societies throughout the state and that the active influence of all woman's clubs should be obtained so that proper legislative action could be obtained, that California may become the fifth state to pass the laws required.

Dr. Milligan, who has recently come to California to assume the superintendency of the Deaf and Blind Institute, at Berkeley, was warmly welcomed, and he especially advocated the support and influence to be obtained from the publicity and co-operation of the daily press.

Dr. Newell Perry, so sure to know the requirements necessary, spoke feelingly of the needs of the blind and of the great necessity for establishing financial foundations to carry on any work successfully for the amelioration of the condition of the sightless.

Dean J. Wilmer Gresham, of Grace Pro-Cathedral, promised his personal aid in every way possible to further the cause.

Mr. Adolphus Graupner, a director also of the California Social Hygiene Society, gave many statistics of what has been done and what should be done on the coast and promised the co-operation and influence of the new but already well organized society to assist and strengthen all effort to secure proper legislative and medical endorsement.

The meeting was closed by Mrs. Andrew S. Rowan, giving a general resumé of what had been done to date and urging upon those present the consideration of the pressing needs of the future, that the benefits and blessings for which the prevention society stands, may be accomplished and not be an ephemeral hope but an act made into law, by the legislation of California.

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Nonofficial Remedies, 1912, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Neosalvarsan is a mixture of sodium 3—diamino—4—dihydroxl—1—arsenobenzene — methanal — sulphoxylate, $NH_2.OH.C_6H_3.As:As.C_6H_3.OH.NH\ (CH_2O)OSNa$, with inert inorganic salts. The arsenic content of three parts of neosalvarsan is approximately equal to two parts of salvarsan. Neosalvarsan is supplied in sealed tubes containing, respectively, 0.15 gm. (2 3-10 grains), 0.3 gm. (4 6-10 grains), 0.45 gm. (6 9-10 grains), 0.60 gm. (9 3-10 grains), 0.75 gm. (11 6-10 grains), 0. 9 gm. (13 9-10 grains). It is readily soluble in water forming solutions which are neutral to litmus and very unstable. The action and uses are the same as those of salvarsan. The average single dose for man is 0.75 gm. (12 grains). It may be administered by intramuscular or, preferably, by intravenous injection. For intravenous injection 25 cc. freshly distilled water for each 0.15 gm. is to be used. For intramuscular injection 3 cc. of water should be used for each 0.15 gm. neosalvarsan, this yielding an approximately isotonic solution. Victor Koechl & Co., New York, (Jour. A. M. A., Sept. 14, 1912, p. 879).

Saloquinine, the salicylic ester of quinine, is described in New and Nonofficial Remedies, 1912. The product as sold by Merck & Co., New York, has also been admitted to N. N. R. (Jour. A. M. A., Sept. 14, 1912, p. 879).

Articles accepted for N. N. R. Appendix:

Mentrol-Iodol is a mixture of iodol 99 parts and menthol 1 part. Kalle & Co., New York (Jour. A. M. A., Sept. 14, 1912, p. 879).

ERRATA.

In the October Journal Dr. Frances T. Weed was reported dead. Since publication we learn to the contrary.

ERRATA.

On page 381, September Journal, appeared in Dr. Nagel's discussion the words "slight" instead of high, also "tendon" in place of tension.

NEW MEMBERS.

Fenton, Lolita Blackett Day-Bew, Los Gatos.
Bly, Fred H., Red Bluff, Cal.
Brooks, C. H., Santa Ana, Cal.
Bryan, George, Fullerton.
Jackson, Paul K., San Luis Obispo.
Edwards, Carrie Hitchcock, San Diego.
Crise, Bruce L., Escondido, Cal.
Giovannetti, R. P., San Francisco.
Hirschler, D. Lee, San Francisco.
Markel, H. H., San Francisco.
Van Nuys, R. G., San Francisco.
Mitchell, Elsie Reed, Berkeley, Cal.
Strietmann, W. H., Oakland, Cal.
Campbell, E. O., Santa Barbara.
Pierce, R. E., Lindsay, Cal.

RESIGNED.

Pring, Ernest, San Francisco.

DEATHS.

Crepin, E. A., Glen Ellen, Cal. (Died in Alhambra, Cal.)
Robinson, Wm. K., Los Angeles.
Gray, A. J., San Diego.
Billings, M. C., Oceanside.
Doig, John R., Ramona, Cal.
Stone, John B., San Diego.
Kearney, J. F., 3672 20th st., San Francisco. (Died in Alaska, Sept. 13, 1912.)

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EDITORIAL NOTES.

TENTH VOLUME.

With this issue the tenth volume of your JOURNAL is closed and another year ended. Whether the net result of the year of work and of publication be good or bad, it is finished and put away with the things that have been. The JOURNAL, this last year, has printed more matter, more original papers and, we think, better papers, than in any previous year. As nearly everything that we published is produced by California physicians, the JOURNAL, to a large extent, reflects the productivity and the value of the product, of California doctors. The better your work and the more carefully you prepare your papers, the better will be the JOURNAL and the more credit will it reflect upon the medical profession of California and its state organization. In saying good-by to the volume and to the year, the editor wishes to take the opportunity of extending his sincere and personal thanks to all those who have contributed and to all those who have helped so greatly with the year's work; the year has gone quickly and smoothly and there has been a pleasant feeling of co-operation. It is impossible to be an editor of anything and not offend some people and hurt other people's feelings; your editor is sorry that this has to be so and in wishing a "Merry Christmas" to you all, he extends his regrets to those who may think that they have had cause to be offended. May we all have a very Merry Christmas and a pleasant holiday and then buckle down to making the next year not only a "Happy New Year" but a better one and a more prosperous one.

PRESIDENT'S MESSAGE.

About the middle of October the President of the State Society, Dr. O. D. Hamlin, sent to the president and secretary of every county medical society in the state, a very important letter. The matters presented have been carefully considered for a long time and the letter was not sent out until the whole question had been discussed with a number of members and with the Council. The following is the text of the President's message and it should furnish food for thought for all of us:

October 12, 1912.

From the President
To all County Medical Societies,

My Dear Colleagues:—

The important matters herein presented for your earnest consideration were considered by your Council at a meeting held September 25th, 1912, and your Council agreed in all particulars with the views of your President.

In the Legislature that will meet in January, 1913, there will be a number of men who have openly stated that they will do all in their power to oppose public health legislation, to do away with much of the existing laws guarding public health and to so lower and weaken the standards required to practice medicine as to practically eliminate all present safeguards and permit any and all unqualified persons, quacks, etc., to settle in California and prey upon our people without violating any law.

You should do everything in your power to make it clear to the business interests of your community that retrogressive legislation of this sort will, in a short time, mean disaster and widespread disease; that epidemics mean a tremendous loss of money and insufficient public health control will mean a certain and sure increase of disease, notably smallpox, typhoid, etc. And also, that lowered standards of medical licensure, special boards for special cults, unlimited and uncontrolled reciprocity will mean an enormous influx of unqualified practitioners and quacks who will be a disgrace to the state and a menace to its people.

If business men can be made to see clearly what the situation will be and to what extent this lowering of medical and public health standards will injure the state financially, their influence with the legislature or with the Governor may be sufficient to curb or counteract this dangerous activity which now threatens the State of California.

If medical standards are to be lowered, or special boards of licensure for special cults created (which will mean the same thing), then the only hope for preserving any respect for our profession in the minds of the better and clearer thinking class of people will be found in our County Medical Societies.

In admitting new members, their professional and moral qualifications should be closely scanned; QUALITY OF MEMBER-

SHIP must be the important consideration from now on.

Every County Society should increase its scientific work to a maximum and every member should participate in it to the end that our members shall keep constantly up-to-date and be constantly improving themselves.

The people of your community should be taught that your Medical Society is a scientific school of medicine; that the work of the Society is for the betterment of its members and their increased ability to care for their patients professionally; that the badge of membership means identification of the holder as a reputable, upright, well qualified practitioner of medicine, recognized as such by his colleagues all over the state.

If the Legislature is bent upon destroying the legal safeguards of the people against quacks, let us, through our County Societies, provide to the limit of our ability a moral safeguard in the shape of membership in such societies.

With the best wishes for the success of your endeavors in these directions, and with the earnest hope that you may be energetic for the right and for improvement and for the protection of public health, I remain,

Respectfully yours,

O. D. Hamlin, M. D., President.

NOTABLE MEETING.

A meeting of the secretaries of state medical organizations was held in Chicago, October 23 and 24, 1912, that was in many ways the most remarkable medical meeting ever held. It was called by the Committee on Uniform Membership, of the American Medical Association, under approval of the Board of Trustees, and the actual traveling expenses of the secretaries were paid by the Association. When the roll was called it was found that 38 states were represented, indicating pretty conclusively a widespread interest in the problems presented by the work of medical organizations and a serious determination to attempt to solve them. The work of the past was reviewed and the difficulties that exist under present chaotic conditions were summarized in eight questions which were discussed by all present. The sessions lasted for two days and an abstract of the meeting will be found on another page in this issue of the Journal. Such a meeting might well be held every year and thus our various medical organizations be brought into closer touch.

MEDICAL DEFENSE.

Nearly every state medical organization that has a medical defense feature has noted, in the last year or year and a half, a marked increase in the number of alleged malpractice suits that are being brought against physicians. The last report in New York contains the following: "The reason why a larger number of cases have been brought this year than for many years past, I cannot satisfactorily explain except in one case * * *." In Kentucky conditions are evidently much the same for in the report for 1912 the recommendation is made that the assessment for medical defense be increased from 50c to $1.00 per member and it is prophesied that the work for the next year will be much more expensive than in the past. The following portion of the Kentucky report is well worth careful thought:

> "We would especially advise the doctor to be guarded in handling all cases as the tendency to sue is becoming more common especially in fractures. In fracture cases it is well to follow the example of a certain doctor. He always asks for a consultant. One patient said to him, 'Why is it, Doctor, that you always ask for another doctor in these cases?' The doctor's reply was, 'If things go wrong you would have a dozen lawyers.' On account of the frequency of suits for malpractice, our responsibility has increased and we should not hesitate to call a consultant or be watchful of all facts pertaining to treatment and management of these cases. Let me remind you that all cases are not surgical, the general practitioner is suffering most."

The same thing is as true in California as it is in New York or Kentucky; malpractice suits are rapidly increasing in number. Is it another expression of the feeling of antagonism to all things medical? Is it another evidence of the general feeling of unrest, of rebellion against any sort of control or supervision and especially intellectual or scientific control? It would seem so. The suggestion to have always a consultant in these cases is good and it would not be a bad idea for the State Society to make a rule that no case of alleged malpractice based on the treatment of a fractured bone would be defended by the Society unless the physician in charge had had a consultant in the treatment of the case.

Above all things, watch your words. Do not criticize the work of your fellow physician; it may start a suit. Walk carefully and considerately lest you also become the target for malicious abuse and unfair criticism.

DOCTOR OR DANGER?

Elsewhere in this issue we publish a letter from our Attorney in Los Angeles, Mr. Morrow, together with some portions of the testimony of a physician in a suit for alleged malpractice which we are defending in the South. A physician with the high degree of ignorance demonstrated by this man's testimony, is a menace to the community. It is an outrage that a reputable physician's professional standing may, at any time, be jeopardized and the Society put to a large expense, by the criticism and the testimony of such an ignoramus. A man practicing medicine—yet ignorant, according to his own testimony, of the anatomy of one of the joints most frequently injured! Do not fail to look up the transcript of this testimony and read it carefully.

MEDICAL DEFENSE.

It is shocking to see to what an extent of lies and false statements business greed will lead some people; truly, a dollar has no conscience and the man with the greed for it seems to have about as little. The Physicians' Defense Co., of Fort Wayne, of which Dr. Miles F. Porter is President, has written many letters to our members who formerly bought malpractice defense insurance from this company but have not renewed their policies since the State Society undertook the medical defense work. The last such letter that has come to our attention is by far the worst of them all. The State Society has defended every suit that has been brought against a member and absolutely without cost to the member. In October we won two suits, one of them lasting four days and the other seven days. In no single case in which the Society has been notified of a suit against a member in good standing have we failed to guard his interests to his entire satisfaction and without cost to him. The second paragraph of the letter below is a lie. The third paragraph is nearly as bad; our attorneys are the best in the state and a local attorney is always on hand and in touch with the member sued. The fourth paragraph is the only honest one in the letter; it is, of course, true that only those who are members at the time of the alleged malpractice and also at the time the suit is brought, are defended by the Society; but that is known to every member, supposedly. In regard to expense, that paragraph of the letter is another plain, straight lie; there is no provision of the by-laws throwing the court costs on the member; there is nothing in the by-laws relating to medical defense; it is all done under rules formulated by the Council and approved by the State Society at the meeting of 1910. The letter is such a tissue of lies that we print the whole thing, except the name of the physician to whom it was written:

Fort Wayne, Ind., Oct. 25, 1912.

Dear Doctor:

With further reference to correspondence we have had with you regarding the matter of your Defense Contract, we will express, in a different way, some of the reasons why you should not depend entirely upon your State Society for assistance in such a serious matter as the defense of a malpractice suit, and we will ask that you consider the points carefully.

When the State Society takes charge of a case for you, you have to agree to follow their ideas as regards the conducting or settling of the case.

When you are protected under our contract, our local attorney will co-operate with you, and you are fully in touch with the situation at all times, and our contract definitely states just what we have to do in order to comply with the terms of the same.

Furthermore, the provisions for defense in the by-laws of the State Societies provide that the physician must not only be a member of the Society at the time the services, upon which the suit is based, were rendered, but also must be a member at the time the suit is brought, and as a suit for malpractice may be started from 2 to 5 years, or even 10 years after the services were rendered, you can readily see that if you should move to another section that you would not be in a position to call upon their local society or the society in your previous location, and that the burden of the defense would fall upon you.

When you have a contract with us, we are bound to defend you in any suit arising out of services rendered while our contract was in force, regardless of when the suit is brought.

You also know, when you have a contract with us, that the expense of the defense will be borne entirely by us, and you do not have to face the probability of there being a deficit in the Defense Fund of the State Society or the provisions in the by-laws which do not take care of any other expenses than the attorney's fees, thus throwing the items for court costs and other expenses on your shoulders.

More important than anything else, you know that when you have our contract your defense would be in the hands of people who are thoroughly experienced in such cases and that your protection is complete and satisfactory.

Under these circumstances, doesn't it appeal to you that your interests will be best served by continuing your protection with us?

Yours very truly,

PHYSICIANS' DEFENSE COMPANY,

Wm. F. Hatch, Ass't. Secretary.

UNFOUNDED CRITICISM.

Too often a careless newspaper will publish an item of supposed news which might be important or of value, if true; but the facts do not support the published statement. The Fresno *Morning Republican* published an item attacking the medical profession of Fresno and alleging that 26 local physicians had refused to answer a night call to attend a sick man. The item came to the JOURNAL office but on the face of it, did not seem to be true; so it was referred to the Councilor for that District, Dr. Aiken, and his report of the actual facts here follows:

In relation to the article published in the *Morning Republican* concerning the refusal of 26 physicians to attend a patient on Sept. 13, I find on calling up nearly every physician in active practice in Fresno only *one* who actually received such a call and his was a very legitimate excuse for not answering said call as his wife had been terribly frightened the night before by a burglar entering his house. About 15 physicians attended the circus on this night in question and of course would not get the call, while quite a number were out of the city. The report in the *Republican* would

lead the public to infer that 26 physicians actually received this call and *refused to respond* before any one could be found to attend the patient. Before this statement was sent broadcast over the land it seems to me very proper that the editor of the *Republican* should have made some effort to learn the exact facts.

Sincerely yours,

GEO. A. AIKEN.

Emergency hospitals in most places are not regarded with much favor by the local physicians for, too often, the young men who do the work are not too particular to remember to refer the patient back to his own physician as soon as the emergency treatment is over. Such being the case, it is a pleasure to note the rules established by the Chief Surgeon of this service in San Francisco and to suggest that the example set might well be followed in other communities. We are advised that the rules are rigidly enforced and that any neglect to remember them is followed by dismissal from the service.

GOOD RULES.

San Francisco, February 23, 1912.

NOTICE

To Surgeons, Emergency Hospital Service.

You are directed in every case brought to the hospital for treatment to at once, when possible, notify the family physician of the patient, and extend to him every possible assistance on his arrival.

San Francisco, May 28, 1912.

NOTICE

To Surgeons, Emergency Hospital Service.

Your attention is again called to the Rule of this Department that you shall not take for private patients those first seen and treated by you in an Emergency Hospital. If a patient informs you that he has no doctor, it is your privilege to suggest a list of not less than six names of doctors whom you know to be reputable in San Francisco, from which the patient may choose one.

You are urged to follow this Rule carefully, and, with a little thought, the benefit to this Service and to yourselves is evident.

It is a pleasure to note that the Nobel Prize, amounting to some $39,000, has recently been awarded to Dr. Alexis Carrel, of the Rockefeller Institute for his remarkable work in connection with the suture of vessels and the transplantation of organs and tissue. Dr. Carrel's work has attracted the attention of the scientific world to himself and to the Rockefeller Institute and some of the results of his research have been largely instrumental in preventing antivivisection legislation in New York state that would seriously cripple scientific research for all time. We sincerely congratulate Dr. Carrel and commend the wisdom of the jury that awarded to him the Nobel Prize.

NOBEL PRIZE.

Last month we called attention to the complaint from various states that there was more or less public antagonism to good and fairly high-standard medical laws and general antagonism to the medical profession. We may add Georgia to the list, for the legislature of that state has refused to pass a medical bill which would bring the standard of medical education up to that of most other states. In the issue of the *Journal of the Medical Association of Georgia* for October we find the following illuminating remark: "Our state is rapidly becoming the dumping ground for all manner of quacks and charlatans and we are doing nothing to prevent such a state of affairs." The same article also asserts that thousands of dollars will be spent by certain interests to prevent the passage of the bill when it again comes before the legislature for its attention.

GEORGIA'S TROUBLES.

DIET IN HOSPITALS.

A recent number of the *Journal of the American Medical Association* contains a symposium on hospital management and among other papers a suggestive essay by Dr. Horace D. Arnold on Hospital Dietetics in which the author starts with the following statement: "The average hospital today is inadequately equipped to feed patients properly according to modern dietetic principles," and he goes on further to say: "The patients are treated dietetically by a set of empirical rules very general and indefinite in character. The diets are ordered according to the name of the disease, with littl consideration of the needs of the individual patient, and that the rest is largely left to the judgment of the nurse," and the remainder of his paper is devoted to a plea for scientific quantitative dieting and for hospital arrangements, permitting of such requirements to be properly carried out.

Attention has been drawn to the same points in connection with the hospitals in San Francisco, both in regard to the dietary at the City and County Hospital and to the use of quantitative diets in private practice. Dr. Arnold's plea and the valuable discussion that ensued thereon, wherein he was backed by some of the most eminent of our eastern confreres, gives opportunity to once more emphasize our crying needs. It is my fortune to have a practice wherein the larger proportion of cases are more dependent upon accurate and skilled feeding than in any other class of work, and I am daily brought face to face with the possibility of carrying out comparatively simple dietetic measures in the hospitals and sanitariums at our command. We have to do with at least four great groups of cases, namely, cases of stomach and intestinal diseases, diseases of the kidney, of the liver and of the heart, wherein it may be safely asserted that suc-

cess is far more dependent upon a correct dietary than upon any other element of treatment. The same might almost be said of the numerous cases of over and under nutrition and also the chronic infections. In these conditions it is a *sina qua non* that the dietary be quantitatively and qualitatively adapted to the patient under treatment; it is equally important, and particularly so in the diseases of malnutrition, that such diet shall not only be satisfactory to the physician but equally so to the patient.

The work of Pawlow has shown how entirely gastric digestion is dependent on proper appetite or at least the presentation of appetizing food, from which we learn that no mere presentation of a dish, accurate in nutritive qualities is sufficient unless it at the same time provoke the appetite of the patient. My own experience and that of others in regard to our local hospitals and sanitariums is that in the treatment of such cases we find the skilful fulfilment of dietetic directions practically impossible of attainment. Hospitals and sanitariums consider first and foremost a culinary arrangement which shall meet the requirements of the largest number of cases with the least expenditure of skill and money; as the majority of the patients they treat are surgical, i. e. people who either require no food during the dangerous period of their detention or ordinary dietary during their convalescence, there is little temptation on the commercial side to cater for the medical cases. Even if it were possible to overcome the financial hindrances, there are few institutions having at their command dietitians or even cooks skilled in the preparation of dishes that shall meet these wants and at the same time maintain the appetite of the patients. I hold it true that in dealing with most chronic ailments in which food of a very easily digestible character is necessary, that only by the skilful variation of the limited number of articles applicable to these purposes can a healthy appetite be maintained, and yet, if we had the right training in nurses and physicians, it would not be impossible to soon produce cooks with requisite knowledge to meet all requirements. Works on dietetics have given us a surfeit of scientific information and formulae, they have yet to give us in addition to dietary tables a scientifically written appendix on the culinary side, describing or suggesting the way of producing the greatest number of varied dishes so arranged as to give definite food elements with a reasonable approximation to correct calory values. The field is a large one; the need is great and the task not beyond the combined skill and collaboration of an able cook and scientific dietitian.

H. D'A. P.

ORIGINAL ARTICLES

CONSIDERATION AND TREATMENT OF SOME DISEASES OF THE UPPER AIR PASSAGES IN SINGERS AND PUBLIC SPEAKERS.*

By C. G. STIVERS, M. D., Los Angeles, Cal.

It has been said that the voice is the mirror of the man, meaning, of course, that it reflects his character, his physical and even his moral and intellectual states. The minister of the gospel acquires a pious voice; the physician, who comforts and heals the sick, will have a sympathetic voice; the lawyer, the colder and more judicial tones. Culture and refinement are very evident in one's voice and the lack of these acquisitions is no less apparent.

Let us consider first those cases that present themselves for treatment to us for advice as to the cause of a failure of voice, either of a sudden or a gradual onset.

The different kinds of voices that we think of in connection with this subject are the hoarse, throaty, tremulous, muffled, whispered, falsetto and the nasal voice. Hoarseness is perhaps the most frequently observed symptom presented by patients. It may be slight or severe, depending on the amount of swelling of the cords or laryngeal structures. The hoarse voice is always pathognomonic either of disease in the larynx or as an expression in the larynx of some disease of the central nervous system. It is only necessary then for us to make a differential diagnosis, first eliminating nervous disorders, then finding what particular pathological condition is present that is causing the hoarseness. The most frequent cause is laryngitis, acute or chronic, then follow laryngeal ulcers, hypertrophic conditions of the mucous membrane of the pharynx and nose, adenoid remnants, adhesions between the pillars and the tonsils, and purely nasal affections, as sinusitis, hypertrophy of the turbinate bones, deviated septum and the like. These various conditions should receive proper attention for their relief. It should be borne in mind in the treatment of professional singers that they have developed their art and their vocal apparatus in the presence often of well marked abnormal conditions and any interference with the anatomy of their voice production must needs be followed by a complete readjustment to the new conditions, oftentimes with results that are lacking in that perfection they had been allowed to hope would ensue after various radical measures had been undertaken. As Kyle put it: "It would be better to secure a normal nose or throat in a professional singer, though one should not overlook the fact that in most cases the voice has been brought to a high state of development with abnormal conditions present and to remove them, regardless of any consideration, might predispose to a reduction of the quality or timbre of the voice—to make myself perfectly plain, I would never remove hypertrophied tonsils in a singer of note unless the voice was affected as a result of some disease of the tonsils—palliative

* Read before the Forty-Second Annual Meeting of the State Society, Del Monte, April, 1912.

treatment of any local tonsillar disease is indicated. Nasal obstruction or post-nasal hypertrophies can be removed with probably no possibility of injury to the vocal cords unless infection of great severity supervenes." Singers as a class are very loth to have operative work done, because of their fear of untoward results and by reason of their dread of pain, suffering and even the temporary crippling of their vocal efforts, which means their earning capacity.

Conditions most commonly complained of in these patients are hoarseness, tiring of the voice and pain on use, the inability to make the voice carry or reach—in stage parlance, inability to "get it over" the footlights, and excess of secretion, or the opposite condition, extreme dryness.

In many cases patients complain of a tiring of the voice and a huskiness or hoarseness coming on after use of the voice. In many of these cases we will elicit a history of mouth breathing and the explanation of the hoarseness depends on several factors. According to Ballenger, the respiratory functions of the nose are to warm (or cool), moisten and filter the inspired air. In mouth breathers this function is absent or impaired. The lower air tract is incapable of supplying the requisite amount of moisture; hence the air vesicles and bronchi are abnormally dry. This irritation causes certain pathologic changes in the air vesicles which impairs their capacity to absorb oxygen and throw off carbon dioxide. Deficient oxygenation of the blood results in the toxic products being thrown off in the circulation. The half-way products are toxic and cause nervous-phenomena and malnutrition. The malnutrition leads to physical imperfection or malformation. Excessive accumulation of carbon dioxide in the blood impairs the function of the leukocytes and other cellular structures. The products of faulty metabolism (half-way products) are not removed from the circulation by the crippled leukocytes and the nervous phenomena are increased by their presence. It is not remarkable in view of these facts that there should be unsatisfactory performance of so high a function as voice production. Mouth breathers should have the underlying condition remedied causing the patient to keep the mouth open, whether it be adenoids, hypertrophies or what not. The surgical measures for its relief include careful and painstaking attention to frequent douching and washing out of the nasal cavities. The wearing of a device like a cap with bands to pass down around the lower jaw and so to keep the jaw elevated has been used by me with success in many cases. After the physical barriers to the normal use of the nose are removed, the associated anemia, malnutrition, nervous unbalance, etc., should receive proper attention.

A distressing condition that causes inability to get proper resonance and also causes much annoyance to the patient by reason of its red appearance, is described by Lublinski as edema of the lower turbinate. On examination the inferior turbinate is found to be not only touching the septum, but pressing on it. The mucosa is ordinarily pale, secretion scant, watery, rarely mucous. On pressure the swelling is reduced, reappearing as soon as the pressure is removed. Five per cent. cocain solution will produce the same result. Anemic and chlorotic women are especially susceptible to this condition. A most striking symptom is redness and swelling of the end of the nose. The treatment is mostly constitutional, light nourishing food, with tonics and physical exercises, and light massage of the swollen turbinate with a cotton wound probe, dipped in menthol albolene two or three times a week for five minutes. The fused chromic acid button inserted through a carrier into a previously made incision in the mucosa of the inferior turbinate I have found useful.

Treatment of Acute Catarrhal Laryngitis: Rest of the entire body and especially of voice, by breathing deeply and slowly—not getting excited or breathing fast. Breathing through nose only—proper use of the voice, using the head register, and projecting the voice upward into and through the nose, talking lightly or even whispering, which is sufficient to draw the attention of any one nearby to the patient's wants. The inhalation of steam medicated or not, through the steam atomizer, or improvised apparatus. Caution the patient not to talk or use the voice for fifteen minutes after the steaming, and to use the steaming three times a day. Sometimes both camphor and menthol are added to the inhalation with benefit. Ballenger recommends confining the patient to the room and keeping its temperature at 67° to 70°, with moist air obtained by steam, medicated with creosote and turpentine. Keep the bowels open with calomel and salines. A hot mustard foot bath and the drinking of hot lemonade are preliminary to general sweating with the patient well wrapped in bed. In some cases an oil menthol spray, two grains to the ounce, twice a day, is a soothing measure.

In severe cases it may be necessary to puncture the swollen laryngeal mucosa with laryngeal knife. Edema may be so great and appear so rapidly that either intubation or tracheotomy may have to be performed especially in young children.

In relief of cough, codein or heroin is useful. Locally nitrate of silver 2-4% or argyrol 25% solution.

The principles of treatment are: (a) Absolute rest of the voice, the patient remaining in a warm room containing steam vapor (medicated or not); (b) free purgation to promote elimination of toxins and ferments; (c) relaxation of peripheral vessels of the body by the administration of pilocarpine and hot drinks; (d) diaphoresis, aided by wrapping in warm blankets; (e) the relief of cough by the use of codein or other sedatives; (f) scarification, intubation or tracheotomy in threatened suffocation; (g) caustic and astringent applications in the late stage.

Membranous Laryngitis: Showing the same tendency to edema and calling for the same treatment as simple laryngitis, and in addition the administration of diphtheria antitoxin or a vaccine—made from some member of the coccus group, as pneumococcus, strepto- or staphylococcus. The prog-

nosis is grave, especially so if there be an extension into the bronchi.

Edema of the Larynx: This occurs in cases of overuse of the voice, as in shouting or singing out of doors as in college glee clubs, firemen, hucksters, etc. In the course of an alcoholic debauch, some whisky may be drawn into the larynx and bring on this condition.

The treatment consists in the recognition of the underlying constitutional disorder and the application of suitable remedies for its relief, or if the condition is primary and not a sequel to constitutional conditions, the relief of symptoms only should receive prompt attention. Cracked ice dissolved in the mouth, the local application of cocain and adrenalin by spraying, in addition to the general plan of treatment of an acute catarrhal laryngitis will be found of use in this condition.

Chronic Laryngitis: This condition may be present in the throat of a person who is obliged by reason of his vocation to use the inflamed larynx continually—and furthermore the inflamed condition is kept up by the improper use of the voice, causing the condition known as singers' nodes or "chorditis nodosa," which will be considered separately.

Chronic hypertrophic or diffused laryngitis is a very frequent cause for the complaint on the part of patients that their voices are husky or weak on arising—and that their voices get tired very easily. They sometimes state that the voice becomes clear or nearly so—as the day advances, unless the voice is used excessively when it remains husky and is attended by pain in the larynx. One characteristic symptom is heard—when an attempt is made to "clear" the throat by hemming or hawking, gentle or violent; this is accompanied by an expiration and a vocalization in undue condition of both muscular and nervous overtension and only serves to increase the existing trouble. Smoking increases the condition under discussion in two ways: 1st, by direct irritation, and 2nd, by indirect action through the blood. Alcohol acts in the same way, and further by digestive and metabolic disturbances. Men are more affected than women.

The laryngeal picture is one of diffused redness of the cords in singers; in others the hyperemia may extend to all parts of the larynx. The secretions are increased but little or indeed in some cases diminished.

Acute and Chronic Rhinitis, will cause a muffling of the voice and an entire absence of that nasal resonance that depends upon the vibration of the air in the nose and sinuses, and the echoing and reduplication of tone thereby resulting. Such a voice lacking carrying power and not being heard as far as the normal voice, will cause the patient to force the tones by trying to sing or speak louder —and so laryngitis may be added to the rhinitis. An interesting condition that may develop as a result of the mouth breathing due to the nasal obstruction is an eczematoid dermatitis, said by Kyle to be due to an underlying uric acid diathesis. An important original research on this subject is the very fine brochure of Willis S. Anderson of Harper Hospital, Detroit, entitled, "Nasal Obstruction. Experimental study of its effects on the respiratory organs and the general system," in which it is proved that dogs develop eczema, loss of all their hair, etc., after having their nostrils closed by sutures to make them mouth breathers.

Aphonia, Spastic—or Spasm of the Tensor of the Vocal Cords: This is a condition in which the cords are, as described by Gowers, brought together too forcibly. The patient cannot speak at all, or the voice is found to be changed and is lost after a few efforts at phonation. This distressing condition may come on suddenly in the middle of a sentence or song and the patient be compelled to cease from further effort. There may or may not be pain in the larynx. There is no observable alteration in the vocal cords. The treatment is rest of the body and vocal apparatus, tonics, personal hygiene and out-of-door life.

Hyperesthesia of the Larynx: or a condition of undue sensitiveness of the laryngeal mucous membrane. Its etiology is in the nervous temperament exclusively and as exciting and predisposing causes may be noted tubercle of the lungs, syphilis, alcoholism, hysteria, acute or chronic catarrhal conditions, morbid growths, rheumatism, gastro-intestinal disorders, adenoid tissue, enlarged tonsils, pelvic diseases in women and irritation at the base of the tongue from lingual tonsil hypertrophy. The symptoms are an annoying cough, mucous expectoration, and hoarseness. The treatment is both constitutional and local.

Paralysis of the Adductors of the Larynx: Chief factor is hysteria. Sudden in onset without symptoms of constitutional disturbance; the main symptoms being aphonia more or less complete. Laryngeal examination shows cords wide apart, as in forced inspiration and apparently immovable. Reflex causes may exist.

Case: School child, 9 yrs. age, petted and spoiled. Did not like school; appeared at clinic with history of sudden aphonia.

Examination: Showed slight redness of larynx, and wide separation of cords, but on being told to breathe in and out, cords functionated properly. Throat and nose normal; hearing normal.

Gentle treatment, winning the confidence of the patient and a confession of the underlying cause for the assumption of the hysteria and suggestion applied with strict injunction to mother not to scold child or let it use its throat for a few days, and assurance that the child would completely recover in three days, with inhalation of steam charged with Lenzoin, resulted in cure in three days, when child asked for a drink of water in a natural voice.

1. Lack of knowledge of voice production—a very general condition among public speakers, especially lawyers, auctioneers, peddlers, and teachers in public schools.

2. Chevalier Jackson calls our attention to the necessity of remembering that chronic hoarseness may be due to malignant disease, hence the immense importance of early thorough examination of every case that comes to us for relief of chronic laryngeal conditions.

There is one condition found affecting singers especially and often in those who use their voices

with a bad method. I refer to chorditis nodosa or singers' nodes. Not so prevalent now, as before vocal instruction had become more widespread. They may be defined as an inflammatory growth situated at the junction of the anterior and middle thirds of the vocal cords. The cause of these nodules is the use of a faulty method of attacking tones or using a focus of tone which places the initial impulse upon the cords in such a manner that rubbing together becomes possible. Holbrook Curtis describes this affection as being quite common among professional singers, especially among operatic stars and he often saw it develop after a single performance, especially if the singer changed from one language to another, notably from French to German. Chiari claims that chorditis nodosa is a typical pachydermia laryngis. Hajek thinks the nodules are glandular hypertrophies.

Pathology: The nodules consist of several layers of squamous epithelium encircled by a zone of congestion. Ballenger likens them to corns on the toes.

Symptoms: There is an inability to produce the tone desired, especially in the middle register. When the cords are separated as in the lower register, there is no difficulty as the opposing nodes do not touch. When the higher register is used the posterior thirds of the cords are necessarily in apposition and not in use and the voice is not greatly affected. When the middle register is used the cords vibrate their entire length and as the nodes touch they interfere with the tone production. The laryngoscopic image shows a very minute nodule on the free border of one or both cords, usually at the junction of the posterior and middle thirds, although they may develop anywhere along their borders. If both cords are affected there will be nodes on each and exactly opposite, touching when the patient attempts to vocalize. A small zone of redness exists at the base of each node. J. J. Kyle describes the condition as being often a diffused granular or nodular condition existing upon the anterior portion of the free border. The granules are much larger and more numerous than the nodular form, white in color and are also surrounded by congested areas. This granular overgrowth at the posterior commissure is called pachyderma laryngitis. I have recently observed such a case in a tailor who had also hypertrophic catarrhal laryngitis. He had a constantly hoarse voice and spoke in a very monotonous tone. He could only say a few words at a time on account of pain in the larynx, and the occurrence of hoarseness. He improved under vocal instruction, using the method of tone production advocated by Holbrook Curtis and many leading vocal teachers. Another case was a school child, nine years of age, who, after an acute laryngitis that cleared up developed an inability to speak or sing, which coming on suddenly, annoyed or frightened her so much that she attempted by shouting to make her voice heard. This, of course, made matters worse. She applied to me and on examination I found a typical case of nodes at the junction of the posterior and middle thirds of the cords. I enjoined complete rest—with the use of the whispered-word method, combined with inhalation of the following mixture that I have found of use in such cases:

R	gm.
Tr. Benzoin Comp.	60.
Ol. Pini	1.
Menthol	2.
Camphor	1.

Sig: Add tsp. to one pint boiling water and inhale, t. i. d.

She improved rapidly and in two weeks was able to speak in her normal voice.

I have seen six cases of chorditis nodosa in the clinic of the medical department of the State University at Los Angeles in the past three months—not in singers—1 tailor, 2 newsboys, 1 school child, 1 stonemason, 1 laborer.

In professional singers, clergymen, actors, etc., the treatment is largely educational, employing the vocal method recognized as most beneficial in tone production to replace the faulty method which led to the appearance of the nodes. The exercises must be given by a person whose musical ear is perfectly able to tell whether the vocal poise is absolutely correct, for if these exercises are attempted with an improper mission, they are worse than useless. I will refer my hearers to the articles of Holbrook Curtis, Behnke, Seiler and other authorities of voice production. One point only is insisted on here and that is that treatment should be commenced the next day after an acute attack in a singer or public speaker; otherwise if we allow rest for several days, the cords become soft and a serous exudate takes place. The great value of treatment at once is that the voice is immediately put into working condition by the proper use of these gymnastics. The method employed by Curtis is not given here—I do not encourage any of you to attempt to teach it unless you have had a previous thorough musical education.

To sum up: I wish to emphasize that in the treatment of singers, they do not stand severe measures well. The utmost gentleness should be used, and what does this mean? It means never to use violent or harsh methods of examination or treatment with them. In applying remedies always for instance to use a tightly wound cotton applicator—the excess of liquid wrung out so that by no mischance could any escape into the larynx. In treating the nose, examine the size of the meatus inferior and if you want to treat the pharynx through the nose, use that size of cotton wound applicator that will go in and out without unduly irritating the turbinates and septum.

If you want singers to rest their voices, better tell them to go away from home where they will not be known and tempted to sing for others, or if they remain at home, they must deny themselves to visitors, friends and well-wishers to whom they might talk.

Remember Kyle's admonition about operations on the tonsils of singers and refrain unless it be of the utmost importance and necessity. In the treatment of various conditions of the throat and nose and larynx, other than surgical, let the case in

hand be approached in a broad spirit of medical investigation. Never let your mental horizon be bounded by the anatomical limits of your specialty, but let us apply the principles of modern medicine to every case coming to us as specialists. Remember that rheumatism, uric acid, diabetes and Bright's disease, anemia, hysteria, and a horde of neuroses, affect the special organs of voice production. To find the underlying cause for the expression of the local lesion in the upper air passages will often lead to finding a rational remedy to be followed by more speedy relief than where the specialist only sees the special lesion.

Discussion.

Dr. Cullen F. Welty, San Francisco: The title of this paper is somewhat misleading and when one attempts in a single paper to cover so much ground I hardly know how to begin discussing it; but there were some things in the early part of the paper regarding the causes of acute and chronic laryngitis to which I take exception. If I talk a great deal I become hoarse because I do not use my voice properly, and two-thirds of the people have hoarseness following singing or speaking on account of this very same reason. If you have a malformation or a pathological condition of the nose, it will be apparent in a different way and will not produce acute or chronic laryngitis, only predispose to it. You may have chronic laryngitis from a nasal sinus or something else; hucksters all have typical chronic laryngitis, and in fact it is uncommon in sinus affections. As I stated there are so many things in this paper to attract our attention that I hardly know what to say. I will say that to treat a case of chronic rhinitis with applications is a long way around. We are living in a rapid age and we want things accomplished in a short time.

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A CONSIDERATION OF SOME OF THE CONDITIONS COMMONLY CALLED "RHEUMATISM."*

By C. C. CRANE, M. D., San Francisco.

In an attempt at accurate and significant nomenclature such terms as "biliousness," "dyspepsia" and "apoplexy," among others, are fast becoming obsolete and the fact is a welcome sign. The use of the word "rheumatism" deserves a similar fate, because it is insufficiently descriptive. It is doubtful if any word is more often misused in indicating a pathological condition in the human body than is this word "rheumatism." The word itself seems to possess some potent, mysterious charm, and yet its acceptance for so many generations is difficult to understand.

The perpetuation of the use of the word "rheumatism" may be more or less accounted for in three ways. First, by long-established custom; second, the use of the word conveys an idea of pain and crippling, and third, the use of the word does not compromise the integrity of the character of the one afflicted. Of the three perhaps the latter reason is the most significant. In the drawing-room, at the church, on the street-car, in the lobby, at work or at play, the absence of this one or that one is satisfactorily explained, such explanation being sympathetically accepted, if the he or she in question is "laid up" with "rheumatism." To be detained by such affliction is almost an honor, surely no disgrace.

If we wish to separate those who are afflicted with so-called rheumatism we might conveniently divide them into four classes.

In the first class would be found the incurables; those unfortunate sufferers from arthritis who still hope even though their condition is well-nigh hopeless. To the second class belong those who have been afflicted with arthritis to the extent that they are ever fearful about a recurrence. Usually the members of this second class are happily engaged in the use of some remedy which is regarded by them as a specific agent capable of preventing another insidious attack by their ever-present and much-feared enemy. Probably all of you are acquainted with some of the prophylactic measures which are executed by the members of this class who are more afraid than hurt.

Some sprinkle sulphur in their shoes; some carry a horse-chestnut or a potato about in their pocket; with others the same result is obtained by wearing a small bag, suspended from the neck, which is filled with various herbs which are changed from time to time according to the seasons. The wearing of red flannel underwear is another practice which is indulged in by many. The eating of a russet apple two hours before breakfast is considered to be of the very greatest consequence and much of its value may be dependent upon the impracticability, if not the impossibility, of pursuing such a practice. Among the medicines which are held in high regard by this class are the salicylates, effervescent salts, the much-vaunted lithia tablets, numberless mineral waters and mixtures of Epsom salts and cider.

It is this class who patronize the Turkish bath establishments so punctually; their vacations are taken especially with the idea of making a trip to "the springs," and between vacations they may be found to be obtaining some mental solace and bodily comfort from the frequent use of some form of home cabinet.

Fortunately, little harm comes from such practices and undoubtedly a very considerable benefit is rendered from the strict regime which is followed, in spite of the various forms of self-medication which are indulged in. This is a class that contributes much to the world's work, as might be expected, because they are not seriously disabled, but rather are they able-bodied and capable people who have been frightened, and as a result are over

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anxious about their health. They are optimistic and they have faith in abundance.

To the third class belong those who, from the standpoint of the world at large, can well afford to be ill, but who, from their own standpoint, can ill afford to be well, and therefore the members of this class take some pride in their enjoyment of ill-health.

The fourth class represents a large number of people who suffer to a greater or less extent most of the time. They have sacrificed much in order to regain their health, but, through errors on their own part or on the part of those who have attended them, disappointment has so often crowned their efforts that even their mental attitude has changed. They have become introspective, peevish, disagreeable, doubtful and discouraged; in a word, then, they have become pessimistic.

Having failed to obtain relief from the various remedies recommended by relatives, friends, neighbors and physicians, and having been deceived about "specifics," panaceas, catholicons and testimonials which are so profusely and fraudulently advertised in the newspapers, magazines and upon billboards, it is little wonder that this class has become what it is. In spite of their misery of both body and mind, still they derive some sort of satisfaction from the conviction that their case has proved so baffling; in their cup of bitterness is at least one drop which is sweetened by the belief that their case is unique.

Such a person is in a most critical condition. His physical condition may not be serious; his mental condition is indeed pitiable. It is but one short step in the line of least resistance for a person in such a *physical* condition to enter the ranks of the drug-habitues; it is but one short step in the line of least resistance for a person in such a *mental* condition to enter the ranks of the various ubiquitous faddists, and it is left with you to decide which of the two evils is the more deplorable.

Much may be done to protect such a person against his own folly; much may be done to save such a person from continuing to be his own worst enemy, and probably, incidentally, he may be restored to health.

Has it occurred to you to inquire into this situation in order to ascertain how it happens that in these days of hypertherapeutics so many of these so-called "rheumatic conditions" escape being cured! Doubtless the first thought which prompts itself in answer to such a question is, that most of such conditions are incurable, and if they are considered from the standpoint of "rheumatism" they are, but it is the opinion of the author that by far the large majority of such conditions is to be accounted for by the neglect on our part, as physicians, to investigate the patient's condition, and it is in support of this conviction that the following rather superficial consideration of some of the conditions which are *called* "rheumatism" is offered.

For convenience sake let us begin with the lower extremities.

A patient is seen who complains of "rheumatism in the feet." The feet are examined and no evidence of past or present inflammation is found, but there is found a weak foot; of poor musculature; flexible to a fault; with its longitudinal and transverse arches abnormally depressed; with the scaphoid more prominent and lower than it should be, normally, coincident with pronation, and with the inner border of the foot convex, coincident with valgus. Deep pressure along the proximal attachment of the plantar fascia produces pain. Such a condition may be called foot-strain, weak foot, pronated foot or flat foot, according to the degree of prominence of the symptom-complex. The treatment consists of showers, exercises, massage, hygienic shoeing and instruction about the use of the feet when standing or walking. In the more pronounced cases and in people of advanced years, the use of a support to be worn in the shoe may be advisable.

Another annoying condition of the foot which is less frequently observed, but which is not less frequently confounded with rheumatism, is the condition known as metatarsalgia, or "Morton's toe," which is characterized by an acute, spasmodic, cramp-like pain occurring usually in the region of the fourth metatarso-phalangeal articulation. As the condition is virtually unknown in those races who never wear shoes, and as it is but rarely observed in shoe-wearing people when shoes are not being worn, we may safely attribute the cause of the condition, in part at least, to faulty shoeing.

Pathologically the transverse arch of the afflicted foot is abnormally depressed; callous formation is often present beneath the metatarsal heads; the head of the metatarsal bone is unduly mobile and an arthritis is often present. Whether the arthritis bears a causative relation to the condition, or is developed subsequently, is a problem which future investigators may determine. When the attack comes on the patient instinctively and hurriedly removes the shoe and manipulates the foot, usually succeeding in obtaining relief by pressure exerted upward under the transverse arch, thus restoring, for the time being, this arch to a more nearly normal position.

Entire relief may be obtained by suitable shoes and the use of a plate which will efficiently support the transverse arch. In some cases the head of the offending metatarsal has been excised, but an operation which seems to promise even better results than the one alluded to consists of attaching one of the extensor tendons to the head of the metatarsal bone.

Still another condition which is often complained of as "rheumatism" is peroneal spasm and it is so easily determined that it would be almost impossible to overlook it if, in the examination of the foot, such a condition were but kept in mind. When present the foot is held in a position of valgus by the peroneal muscles which are in spasm. The peroneal tendons are prominent to the eye and palpably tight. A simple form of treatment for the milder cases consists of rest in bed for a few weeks, during which time massage and corrective manipulations are enjoined. When the patient is

allowed to be up and about he may wear shoes which are slightly raised on the inner side of the heel and sole. In the more protracted cases it may be expedient to correct the position under anesthesia and apply a splint to the foot and lower leg while held in an overcorrected position.

In the very obstinate cases it may be necessary to convert a peroneal muscle into a supinator, a procedure which is not only feasible but also of distinct mechanical advantage to the future welfare of the foot.

A rarer condition which may be confounded with rheumatism is that of intermittent limping, which is produced by an obliterative endarteritis. It probably accounts for many of the cases of spontaneous gangrene and it evidently bears a close relation to Raynaud's disease and to the condition referred to by S. Weir Mitchell to which he gave the name of erythromelalgia. The attack is usually brought on by walking, when a severe pain occurs in the calf of the leg accompanied by a limp. The pain is often so intense that the patient is compelled to rest. After a short time he may again resume his walking, only to be again halted by the excessive pain.

If the foot is examined at this time it may be found cool and blanched or cyanotic; the calf of the leg indurated and tender and the dorsalis pedis artery pulseless. Such a condition is very frequently observed in conjunction with static errors in the feet, and the latter may obscure the former. Therefore, it is well to consider such a condition as a possible factor in all examinations of the feet, and its absence or presence may be very definitely proved by the pulsing or pulseless condition of the arteries of the lower leg and foot. The treatment consists of a support for the static error and the rather empirical use of nitrites, mercury and iodides. Although the disease is usually progressive, and even though it may terminate in gangrene, still very great relief may be obtained from the plan of treatment outlined, *provided* that the amount of walking can be regulated very carefully. The amount of walking may be gradually increased, but should never be permitted to that amount which precipitates an attack of pain or limping. Such regulation has been emphasized by Doctor Hunkin and is of the utmost importance.

Another instance of mistaken identity is occasioned by the presence of that which, until the advent of the Roentgen-ray, was frequently alluded to as "policeman's heel." The radiogram may show a spur located on the planter surface of the os calcis, or it may be negative, occasionally, even in those cases which are positive from a clinical standpoint. The distinction and pride which the policeman formerly enjoyed in exhibiting such an affliction has very materially diminished since an inquiry into such cases revealed the somewhat unsavory fact that such spurs are frequently rather closely related to an antecedent urethritis of specific nature. For the comfort of the policeman, however, it must be admitted that the burden of proof is as yet upon the clinician. We may say that the evidence is presumptive and, incidentally, rather suggestive. Spurs may be suspected if the heel remains very sensitive for any considerable period, and the suspicion may be greatly strengthened by exerting pressure into the planter surface of the heel which produces pain. It is important in the detection of spurs that this pressure test be applied not only in an upward but also in a backward direction, because many spurs face forward and may escape recognition if the backward pressure is not practised. The milder types may be relieved by protecting the sore area, but well defined spurs should be removed through an incision, preferably on the inner side of the heel.

Upon leaving the foot and considering the lower leg, one must be on guard when his advice is sought concerning "rheumatism of the bone." The bone referred to is usually the tibia. The history of such a case acquaints one with the fact that the trouble is chronic and not particularly painful except when the tibia sustains, as it is apt to from time to time, slight traumata, following which the pain may be very severe and entirely out of proportion to the amount of trauma sustained.

Examination reveals tenderness along the crest of the tibia, with some unevenness, with perhaps some superficial edema; further examination may reveal a general adenopathy and a radiogram may show the thickening of the periosteum in the area involved. Such evidence points to syphilis, and while the local condition may need some sort of protection, the usual constitutional treatment with antisyphilitic remedies should be relied upon for ultimate results. If the patient doubts your deductions, a Wassermann may be of service in establishing the proof and in gaining his co-operation while undergoing treatment.

In the knee there are several conditions which may be confounded with rheumatism because accompanied by the presence of fluid in the joint. The *acute* hydrops articuli, affecting one or both knees and appearing immediately after a severe injury, may be justly called traumatic. The *chronic* hydrops articuli, affecting both knees and appearing, as it were, spontaneously, is usually syphilitic in origin, and neither the age nor the social position of the one so afflicted should deter one in making such a diagnosis and instituting adequate treatment. Goldthwait believes that rarely such a condition may be of an infectious nature. Again we may resort to a Wassermann if there is any lack of evidence needed to convince us. On the other hand, the hydrops articuli may be monarticular and nontraumatic in origin. If such a condition is accompanied by inflammatory signs and a radiogram shows that the bone and cartilage are intact, then we may call this an infectious process, and if, in addition, the patient has a gonorrheal urethritis, the problem of etiology is simplified; but if such a condition is not accompanied by signs of an acute, inflammatory nature, and if the radiogram shows evidence of a destructive process in the bone, then we should not fail to consider tuberculosis and syphilis.

In such a case the history and the deformity

and the radiographic findings may leave one undecided, and it is in such a case that the use of the tuberculin test and Wassermann reaction render such valuable assistance in establishing the diagnosis. Even though it adds to the complexity of these obscure conditions, yet the fact should be stated that in the synovial form of tuberculosis of the knee the process may go on for many years and the radiographic findings be absolutely negative.

Another condition which is particularly apt to involve the knee-joints, and one which is very often confounded with rheumatism, is villous arthriti. That it may occur as an independent condition is conceded, but much more often it is an aftermath of some other process in the knee, and perhaps most often it represents only a link in a chain, the name of the chain being "faulty statics," and it is particularly important, from a therapeutic standpoint, that this should not be overlooked, because by treating it as a distinct entity instead of as an incident in a vicious circle which has become established, the patient may be bitterly disappointed and the attending physician greatly chagrined.

Villous arthritis is particularly common in women who have for a long time been slaves to fashions more lacking in sense than precedent. The dictators of fashion, and, whoever they may be, they show little appreciation either for human mechanics or for the conservation of human energy; these dictators of fashion prescribe corsets and shoes which, to put it mildly, tend to produce a very considerable amount of instability in the knee-joints. Add to this the circulatory disturbances and the tendency in the middle-aged woman to accumulate fatty deposits; all this superimposed upon knee-joints which in women are, because of the relatively greater width of their pelvis, less stable than in men; it is no wonder that such knee-joints, subjected to these various disadvantages and the constant traumata incident thereto, develop such fibro-fatty-vascular fringes from the synovial membrane of the joint, but the wonder is that all knee-joints which are similarly abused for any considerable time do not present similar conditions.

This condition of villous arthritis may develop insidiously and give no trouble until some of these fringes become pinched between the tibia and femur, with the result that there is produced a sudden, severe pain in the knee and a feeling of "giving way" in the joint, but rarely does the knee lock and almost never does the patient fall. These latter facts are accounted of importance in differentiating between villous arthritis and avulsion of a semilunar cartilage, as in the latter condition locking of the joint is frequent and falling not at all uncommon. Following this acute pain there is apt to be some stiffness, swelling and an increase of the surface temperature, which slowly subsides, leaving the knee tender, swollen and lame.

Examination of such a knee reveals a capsule which is thickened and infiltrated; the fatty deposits about the knee are so extensive that the parapatellar sulci are obliterated. In active or passive motion of the knee a peculiar, soft crepitus is elicited which conveys a sensation to the examining hand that might be produced if the joint was filled with strings of cooked macaroni. Often the villi are so well developed that they may be distinctly palpated. The mechanical imperfections of the joint and the burdens under which it operates and actually *labors* are conspicuous as already intimated.

With regard to the treatment. The radical treatment consists of an arthrotomy and removal of the villous material, and the subsequent correction and maintenance of normal alignment from head to feet.

If good objection is raised against the radical treatment, then much relief may be promised from the use of local depletion in conjunction with snug fitting bandages applied over parapatellar pads, and correction of the static error by means of efficient plates, hygienic shoes and a suitably reinforced corset. Of course it is important to direct treatment to those conditions, if any are present, which may have some local or general relation to the one under consideration.

Next in order we may briefly consider some of the conditions involving the hip which are often and very erroneously called rheumatism. As intimated in the earlier part of this paper, pain and interference with function in the region of joints is prima facie evidence of rheumatism; therefore, some of the conditions which are characterized by *such* a symptom and by *such* a sign in the neighborhood of the hip-joint should receive our attention, and it is in just such cases that the radiographic findings are of very great value in aiding one to correctly determine the nature of the process from which the patient suffers.

In a given case there may be a history of injury of varying degree, since which time there has been pain and limping with perhaps some deformity. Upon examination there is found some interference with normal mobility. Such a condition, without the evidence which a radiogram contributes, is often diagnosed and treated as a sprain, but with the radiographic evidence such "sprains" may be found to be, in children, tuberculosis, and such "sprains" may be found to be, in the aged, fractures, and it is well to remember that such fractures do not necessarily preclude walking.

It is apparent, therefore, that for the welfare of the patient, and incidentally for the welfare of the attending physician also, that all hips which have sustained even the most insignificant of traumata had best be regarded as sprains *only* after the more serious conditions have been definitely proved to be absent. While rest for a few days may cure a sprain, rest, protection and hygiene covering at least a few years, will probably be essential as the basic principles in the treatment of tuberculosis of the hip, and surgical intervention will probably be found necessary in the treatment of fracture in the large majority of cases.

There is another condition which is more frequently encountered in the hip than in any of the other large joints, and one which is very frequently called rheumatism, the use of the word rheumatism being sanctioned, to a considerable extent, by the medical fraternity as well as by the laity. This condition has been termed rheumatoid arth-

ritis, osteo-arthritis, metabolicarthritis, toxic arthritis, hypertrophic arthritis and malum coxæ senilis. By some it is considered to be a physiological concomitant of advancing age and to be as inevitable as the finding of an occasional cast in the urine of people of forty-five or fifty years of age whose kidneys present no other evidence of disease.

This condition, which enjoys so many aliases, is a very common one and is characterized by an insidious onset and slowly progressive course of involvement. The victims become more or less accurate weather prophets, because the process exacerbates, to the discomfort of the victim, during atmospheric changes which are accompanied by a fall in temperature and an increase in the humidity. As the storm subsides and pleasant weather returns, so do the stormy activities of this focus in the hip-joint subside and comfort return, but not quite the comfort which the victim formerly knew. From time to time the victim is reminded of his "rheumatism" when he attempts some activity in which the hip is subjected to strain.

The following morning, perhaps, the victim finds it convenient, if not necessary, to have his shoes laced for him. His wife may nettle him a little by reminding him that he is aging fast or by intimating that he is beginning to pay the penalty for the errors of life which he has committed in days and nights now gone, and even though the wife is not specific as to the errors referred to, still she is probably stating the truth better than *she,* herself, is aware and far better than *he,* the victim, appreciates or relishes. He may dispute her mildly, or otherwise, and yet, as he recalls his "errors," and he acknowledges candidly, to himself, that there were such, and because of the shoelacing incident in which his wife took such an active part, he does not doubt her conclusions.

He resolves, again to himself, that he will reform, and he begins his reform by walking to the office on that very morning and walking home from the office on that same afternoon. He feels vastly better. His wife is taken into his confidence, and after a protracted conference, in which the wife is interested and the victim is tractable, they agree that *exercise* is the sine qua non; that *exercise* is the panacea for all past errors; that *exercise* is the most potent antidote to premature old age!

The victim becomes an enthusiast over exercise. The following morning he leaves the house a little earlier in order that he may walk more than he did on the previous morning. This relatively excessive amount of exercise is indulged in for a few days by the victim and on Sunday the wife, who, by the way, has been lacing the victim's shoes each morning without protest, decides that she will be actively identified in this campaign of exercise for the introduction of which she considers herself partly responsible, and so a much longer walk is taken and it is purposely selected because the performance will necessitate the most vigorous sort of exercise.

They return tired but the victim is optimistic though painfully stiff in his hips. The next morning he is lamer than ever but undauntedly he walks again. Somehow his hips are not becoming limber since that long, hard tramp of Sunday, but he perseveres in his exercise and a few days later varies the monotony of it by playing golf. He plays intensely although somewhat stiffly. The following morning the victim is confined to bed *a victim indeed;* a victim of hypertrophic arthritis!

Better for him, by far, that the last ten days had been spent quietly in bed. Worse for him, by far, that all this added work and strain should have been urged upon these joint structures in which there was such urgent need for rest and protection.

The treatment of hypertrophic arthritis may best be undertaken after a careful investigation into the patient's metabolic activities and consists in the correction of such and the restoration of all of the bodily functions to their nearest-normal condition and locally, protection, for a very long time, of the part afflicted. In the exacerbations of the disease not only protection, but also immobilization, are of the utmost importance and during the more quiescent stages of the disease protection of that sort which will most effectually allow the joint the greatest amount of motion well within the limits of the painless arc.

So prevalent is this disease and so frequently is it overlooked and so important is its recognition, especially from a therapeutic standpoint, for the reason already alluded to, it may be well to mention some of the common phases of hypertrophic arthritis (osteo-arthritis) when it involves the vertebral column. Among the common complaints which are very suggestive of hypertrophic arthritis of the vertebrae are occipital neuralgia, torticollis intercostal neuralgia, lumbago and sciatica, the complaint depending in each instance upon what particular portion of the spine is involved.

The "crick" in the back may be similarly explained and is accounted for by unguarded attempts at motion. It is not presumed that such symptoms may not be caused by other conditions than hypertrophic arthritis, but rather that scch symptoms are so frequently associated with and dependent upon hypertrophic arthritis that they should always arouse a suspicion as to the existence of the latter and such suspicion should be entertained until an investigation of the patient's condition indicates that such a suspicion is without foundation. The treatment, as already outlined in considering the hip, consists of protection of the part involved in the best functionating position and the correction of metabolic errors if such may be existing.

Another annoying condition involving the lower portion of the spine and its adjacent structures which is less frequently mistaken for rheumatism than it was before the very lucid contribution to the subject by Goldthwait is that dependent upon relaxation of the sacro-iliac joints. You are well acquainted with the mechanical faults of the sacro-iliac joints and the resulting instability incident to such structural imperfections.

While it is impossible to adequately epitomize such an able analysis of the subject as Goldthwait has given us, yet, in a general way, a few of the leading symptoms and signs dependent upon such

relaxation may be mentioned which may aid us in correctly diagnosing, prognosing and treating an ailment which is of very common occurrence and one which, though not difficult to recognize, may lead to protracted suffering and severe invalidism if it escapes recognition and adequate treatment.

Normally there is present some motion in the sacro-iliac joints but this amount of motion may be disregarded as it is scarcely perceptible.

Conversely, any considerable motion in these joints is pathological and it may be demonstrated by having the patient stand and alternately support the body on one leg and then on other; or, the same result may be obtained by the somewhat more elaborate straight-leg-raising tests which are usually performed with the patient in a prone position when the Y-ligament of Bigelow and the hamstring muscles are alternately made use of in tilting the pelvis forward or backward upon the sacrum.

The pain which is produced by relaxation of the sacro-iliac joints is quite characteristic and if we were to make fine distinctions we might say that it is an ache; a dull, dragging ache. It is referred to one joint or the other or both; is aggravated by pressure; is aggravated by motion taking place in the joint and is aggravated by assuming a position of dorsal decubitus, the latter being quite a distinctive characteristic of sacro-iliac pain. Although the pain is located at the joint it may be referred to other parts of the body on account of the anatomical disposition of the lumbo-sacral cord and other nerves intimately associated in this neighborhood. The ache of a relaxed sacro-iliac joint, or joints, may be mistaken for kidney-disease, for lumbago and for sciatica.

From pressure on the obturator nerve, which is in close relation to the joint, there may be pain complained of in the hip joint and even more pain complained of in the knee joint as both articulations are supplied by the obturator nerve and the larger filament is distributed to the joint which is farthest removed, namely, the knee.

Again, from the close relation between this joint and the nerves which are distributed to the reproductive aparatus it is not difficult to understand the production of pelvic pain, especially in women, which is so apt to come under the observation of the gynecologist.

Other examples might be mentioned but the ones alluded to so briefly may suffice to emphasize the importance of this condition of relaxation of the sacro-iliac points which is of such common occurrence and not difficult of recognition.

As to the treatment of sacro-iliac relaxation. In the milder types strapping of the pelvis and a support under the back during recumbency may be all that is required. In the more protracted cases a suitable corset may be reinforced with steels or a corset-belt, for day use, and a pelvic girdle may be worn, for night use, with great relief. In the more pronounced and more obstinate cases a more unyielding apparatus may be necessary such as is offered by a spinal brace with a rigid pelvic-band. In those cases which are accompanied by permanent subluxation it is often necessary to manipulate the joints under full anesthesia and to subsequently apply any or all of the agents referred to as occasion required.

Although this condition is often chronic; and associated with debility; and frequently encountered in women still, there are the acute cases which occur in the able-bodied and among men. A laboring man may lift a heavy weight while in a stooping position or a football player may sustain a severe strain of the back and in either instance this very vulnerable and poorly protected joint may receive the full effect of the trauma. In passing it may be well to remember that the sacro-iliac joints are true joints and are, therefore, susceptible to infectious and other processes similarly as are other joints and finally it may be well to consider relaxation of the sacro-iliac joints not so much as a distinct entity but rather as a part of a vicious circle which has become established. Unhygienic shoeing may be indirectly responsible for the condition by producing pronated feet combined with equinus; then follows flexion of the knees with a tendency to knock-knee; the next factor is a tilting of the pelvis and finally strain of these joints which may terminate in relaxation. The reverse is also true and may be initiated by the prevailing style of corset which tilts the pelvis and, in an effort at maintaining equilibrium, the knees automatically flex and the weight, being thereby improperly transmitted to the feet, the latter, being probably unhygienically shod, yield to the faulty transmission of weight and become flattened. The moral is quite obvious. Undoubtedly a very large percentage of relaxed sacro-iliac joints are included among the latter and such a presumption accounts for the very considerable number of cases which are not relieved. Such conditions are recognized but not recognized in their significance to human statics.

The first and last letter in "sacro-iliac joints" and "statics" is "s" and lest we forget the relation one to the other it might be safe to advise that that "S" used in these words be made very large and that the words be considered together and interchangeably when conditions in either are at fault.

Another disease of the spine which is mistaken for rheumatism is tuberculosis. If the examination of backs was more thoroughly made it is believed that tuberculosis of the spine would be much less frequently overlooked. This conviction is based upon two facts. (1) That tuberculosis of the spine presents no serious difficulty as regards diagnosis, usually, and (2) that very often such conditions are determined to be rheumatism when the patient's back has never been examined.

In the early stages of the disease the symptoms and signs of tuberculosis of the spine are not pathognomonic but are more or less common to other diseased conditions of the spine and therefore their enumeration may be omitted. As tuberculosis of the spine especially in children is not, per se, a very painful condition it is not remarkable that the process often progresses to such an extent of destruction that a kyphos is present before it is observed. At the same time there may

also be an abscess which is palpably demonstrable or at least suggested by interference with hyperextension of the hips. Surely such a condition ought not to be confounded with rheumatism which never presents such characteristics.

The treatment of spinal tuberculosis will be but briefly outlined at this time, the fundamental principles of which consist of the best obtainable hygiene together with immobilization of the spine in the position of hyperextension.

The latter may be efficiently carried out by placing the patient on a properly constructed stretcher-frame, such as was introduced by Hunkin about 13 years ago, and keeping him there for several months or until the evidence of activity in the focus has subsided.

If the disease is located above the lumbar region the value of this stretcher-frame treatment may be enhanced by the application of a head-sling. During such treatment the position of hyperextension is to be continuously maintained and under no conditions is the patient to be allowed to assume a sitting posture because the assuming of such a posture may be immediately followed by a paraplegia. The author has in mind a child afflicted with spinal tuberculosis who was allowed to assume a sitting position for an insignificant time. Paraplegia was immediate and of more than a year's duration. Such an oversight in the treatment of spinal tuberculosis deserves to be known, as it is known, namely, as a *"cardinal sin."*

Later on, when the activity of the process has subsided, the patient may be gotten onto his feet, but the spine is still to be held in hyper extension, the means used in maintaining such a position being less important. During this period of ambulatory treatment if the kyphos is in, or is above the mid-dorsal region of the spine the head should be supported from below the kyphos and no apparatus can be more simple, more comfortable or more adequate than the apparatus which may be attached to the jacket, consisting of chin-cup and fork as perfected by Sherman and Hunkin, respectively.

While a person may be greatly incapacitated by the various conditions considered which involve the back and lower extremities still, much of the world's work is performed by those who are thus afflicted.

As many people are dependent upon the use of their upper extremities for a livelihood it may be well to consider a few of the conditions, particularly those in the neighborhood of the shoulder, which are confused with rheumatism. A patient is seen who has fallen upon the shoulder. The attending physician has assured the patient that no bones are broken. The arm is treated with local applications and massage and kept in a sling for a few days.

Some pain persists but the arm can be swung forward and backward, as is done in walking, without any discomfort, and the ability to lift weights with the arm at the side of the body is virtually the same as it was before the accident occurred, but abduction is very painful and often impossible. The pain is referred to the top of the shoulder and may radiate down the arm as far as the insertion of the deltoid. Such a history with such findings is characteristic of subdeltoid bursitis with rupture of the fibres of the supraspinatus muscle or tendon.

The treatment of subdeltoid bursitis, and the patient should be so informed, is usually unsatisfactory without surgical intervention if, after six months, the original disability persists. In other words, if the treatment of subdeltoid bursitis by rest, support, massage, active and passive exercise has been persevered in for six months without cure, it is safe to assume that a cure is impossible without removal of the bursa. Such a conclusion is warranted on account of the pathological changes which have taken place in the bursa during this period. The bursa has remained enlarged, become fibrous and probably calcareous to such an extent that it is mechanically impossible for the bursa to pass or to be passed beneath the acromion process as is its habit in ordinary abduction of the arm.

Another bursa of this neighborhood to which little attention has been given until of late and one which may be productive of a very considerable amount of disability when it is chronically irritated is the subcoracoid bursa. The onset is usually insidious and the cause usually dependent upon what may be termed "an occupation-strain." The pain is localized at the coracoid process which is situated about an inch below the junction of the middle and outer thirds of the clavicle and is distinctly aggravated by rotating the humerus inward. Just such a result is brought about by those who sit with the shoulders carried forward and inward as seamstresses, students and *editors,* resulting in an impinging of the lesser tuberosity of the humerus against the coracoid process. The treatment consists of the application of a shoulder-brace to keep the shoulders outward and backward together with exercises to strengthen the muscles whose function it is to prevent this sort of mechanical misfortune. In very obstinate cases it may be found necessary to remove a portion of the coracoid process before relief is permanent; such a procedure is occasionally resorted to in the case of baseball pitchers whose very valuable pitching arm has "gone wrong," the "wrong" being explained by the repeated trauma sustained by this subcoracoid bursa in the excessively violent action which is incident to pitching.

Another condition of the shoulder which is frequently mistaken for rheumatism is tuberculosis. We are apt to think of tuberculosis of bone as a disease which manifests the same pathology in every instance and while this is, in a general way, true yet clinically tuberculosis of the shoulder may present a very different symptom-complex than tuberculosis in the hip or knee. Tuberculosis of the shoulder of the so-called "caries sicca" type differs very materially, in its manifestations, from tuberculosis of the spine, hip or knee in that the resulting deformity is less marked; in that the disability is much less pronounced and in that the formation of abscess is extremely rare. In virtue of this latter fact the name accorded to this form of tuberculosis, caries sicca, is better comprehended.

Such cases are usually insidious in onset and gradually progressive. The shoulder becomes sensitive and painful; there is interference with the normal motions; crepitus may be elicited and atrophy is pronounced. Many of the chronically sore shoulders encountered in adult life are tuberculosis of the caries sicca type. Radiographic findings in such cases may be somewhat disappointing because of their negative nature but as such should not be misleading as the process may very likely be limited to the synovial membrane at the time that this radiograph is taken; later on one may detect an osteoporotic area in the head of the humerus which is in decided contrast to the destructive evidence of tuberculosis of bone as it is seen in the usual case.

As to the treatment of caries sicca. Perhaps it is fairest to the patient to try conservative measures first which consist of immobilization, protection and the best of hygiene. Such measures undoubtedly deserve a more thorough trial than is generally accorded them, but given such a case, and granting that the treatment is to be of the conservative sort what may be expected? For a short time, perhaps, more freedom from pain and some contentment and subsequently, and for a much longer time, disappointment followed by dissatisfaction because the patient is being incapacitated and because the improvement is so very slow. What then? A radiogram and, as already intimated, this may indicate a small, osteoporotic area in the head of the humerus. Then the conservative measures are abandoned and an operation seems justifiable because of the apparent insignificance of the lesion and because of its easy access. Before going further it would be well for all concerned to consider three pertinent items. *First,* that it is virtually impossible to obtain a radiograph of the shoulder except in one plane. *Second,* that the clinical signs are more important and more reliable than the radiographic findings. *Third,* that if an operation is performed the disease process will probably be found to be much more extensive than it was thought to be. In other words, do not be in haste to depend too much upon radiographic findings in these cases of caries sicca because such findings rarely picture the full extent of the tuberculosis invasion.

If operation is to be undertaken both the operator and the patient should be prepared: The former to encounter a much more extensive lesion than was indicated; the latter for much more mutilation than was expected.

One other condition may be referred to which produces symptoms referable to the upper extremity, that of cervical rib. Since attention has been called to this very important anomaly by the excellent contribution by Keen, fewer cases have been overlooked. The symptoms and signs are, as one might expect them to be, due to interference with the circulation in the upper extremity, together with the results due to nerve pressure. Incidentally there may be noticed a hard tumor above the clavicle. With such evidence a radiogram may confirm your suspicions.

The condition is usually unilateral and rarely produces trouble before adult life. If a cervical rib is accidentally discovered and is not productive of the circulatory disturbance or the nerve pressure referred to, it is well to leave it alone; if it is productive of such then it should be removed.

There remains one other condition which, perhaps, is more often mistaken for rheumatism than any other; such a mistake being most unfortunate and not rarely of fatal consequence. Characterized, as it is, by a sudden onset, severe pain in a joint or its vicinity, fever, sweats and complete disability, it is no wonder that acute osteo-myelitis and so-called acute articular rheumatism are so easily and so often confounded. The report of a case may suffice to emphasize some of the more important difficulties which serve to mask the real condition. A man was seen by the author who some twenty years previous had had an attack of acute polyarthritis, the so-called acute, articular rheumatism. Since the original attack not a year had passed but that the patient had been laid up by what was called a recurrence. The history of the present attack was that the patient had been exposed for many hours to a cold rain. He was seized with pain in the right knee, chill and fever.

The family physician who had attended the patient, off and on, for several years was called in. The knee was rubbed with oil of wintergreen and bandaged. Salicylates, aspirin and morphine were prescribed. This treatment was continued for a few days without appreciable relief.

The author was asked to see the patient. From the history of the case it seems no wonder at all that the condition was at first mistaken for rheumatism but a patient with *such* a history and with *such* a condition who has taken 120 grains of sodium salicylate, 90 grains of aspirin and 2 grains of morphine in each twenty-four hours for ninety-six hours without relief, no matter *what* sort of a rheumatic history he can tell, has something more than rheumatism! It took several more precious days to convince the patient and family, who were averse to operation, that an operation was imperative.

In the meantime a fluctuating tumor appeared in the region of the internal condyle and consent was gained to "prick" it. This proved to be a sorry compromise. The tumor was incised and more than a pint of pus was evacuated. Immediately the patient was easier.

The following day the patient was so much relieved that consent to further operation could not be gained. Finally, operation was consented to and the shaft of the femur, the articular processes of the femur and tibia and the greater portion of the shaft of the tibia presented evidence of such extensive destruction that the leg was amputated.

Some weeks later, during which time the patient had successfully battled through three attacks of pneumonia, he died.

Just a word as to the differential diagnosis between these two conditions, acute arthritis and acute osteo-myelitis.

In acute arthritis the pain is *in* the joint; the joint is swollen and the salicylates often relieve. In acute osteo-myelitis the pain is often *near* the

joint; the joint may not be swollen for several days after the onset and the salicylates do not relieve.

A leukocytosis may not occur in infectious arthritis but it is almost certain in osteo-myelitis. If such information is not sufficient aspiration should be performed and if pus is obtained it should be evacuated.

If it is feasible in such cases have a radiograph of the joint and its neighborhood as such information may virtually settle the question as to the presence of an arthritis, in which the bony structures are intact, or of an osteo-myelitis in which, even very early, there is evidenec of a process of bone destruction.

This case is related somewhat in detail not because it presents any extraordinary features but because it represents the type of case that any one of us may be called to treat within the next 24 hours as *"rheumatism."*

THE RELATION OF PAIN, ESPECIALLY BACKACHE, TO JOINT STRAIN, OR THE RELATION OF PAIN TO MECHANICS.*

By S. J. HUNKIN, M. D., San Francisco.

Allow me to prologue and say that it is my conviction that 33 1/3% of all pain coming to suffering humanity: of all pain that human kind is heir to, is directly mechanical: that is, it is due to gross mechanical causes—directly and evidently so, and can be relieved permanently and directly, only by mechanical procedures. Also when the problem is not thus approached, the patient has to be "doped," while nature gropes after the mechanical efficiency, and seeks the repose which comes after it is found. The problem is voiced always, and whenever the patient ceaselessly moans and tosses, and complains that he cannot find a comfortable position: and comparative relief from mechanical stress is secured, whenever he asks to be left alone, and deprecates or refuses to be disturbed or moved.

It is not so long ago that I understood that backaches, lumbagos, and sciaticas were generally due to pathological changes, especially to pelvic pathological changes; and when the mechanics were found also at fault in these cases, I believed, even when it was appreciated that the correction of the mechanical error was necessary to the relief of pain, that the faulty mechanics rather interfered with the repair of the pelvic pathological condition, than was itself the primary cause of the pain.

Later, evidence that mechanical error was oftimes the direct cause of the suffering, could not be ignored. Again later, we believe that many times, when pathology is demonstrated, which perhaps a little questionably appears to call for operation, that it, the demonstrated pathology, plays no, or only a minor part in the suffering complained of. This last statement is not rarely proven to be true by the total failure of the carefully planned, and well performed operation, to give the expected relief. I am not to be understood as believing that applying mechanical principles to remove strain from the human structure is going to take the place of, or can be generally substituted for, well planned operations on gross pathological conditions, in the pelvis or elsewhere in the body. I do believe, however, that if the ordinary medical man, the surgeon, and especially the gynecologist, would consider the joint mechanics in his plan of treatment, and give attention to the mechanical factors which relieve stress and prevent strain of the structural frame, he would immeasurably lessen the suffering of the patient. Also I am constrained to believe, especially in these gynecological cases, in which the pathology found in ordinary reasoning would hardly be thought capable of inducing symptoms so severe as those complained of, that mechanical errors should be early sought, and before any operative procedure is conceived. And it is not safe to hold the pathology found responsible for some of the pain and, blaming hysteria for the balance, operate expecting the hysteria to subside after the operation. This idea is responsible for frequent failures to cure. As time goes on, one learns that there is some discoverable, underlying cause, for most hysterical and neurotic symptoms, and that the patient is not simply perverse.

Similarly the medical man should not give medicines for bone pains, or for rheumatism confined to the lower limbs, or to the back, before looking well after the mechanical supports and the bodily balance. Also, if acute inflammatory rheumatism, or any joint or muscle pain, does not yield promptly to treatment, it is a safe bet that the pain is maintained by undue stress upon the joints. This is also a truism in most of the so-called attacks of "neuritis," and also in most of the sciaticas and lumbagos. I believe, although I am not prepared to fully discuss it at this time, that no inconsiderable part of the pain and distress ordinarily associated with phthisis, pneumonia, heart-disease and particularly with the so-called "acute inflammatory rheumatism" is associated with, provoked, and maintained, to no small extent, by mechanical strain and stress, and can be relieved by the ordinary mechanical methods for relieving strain.

To wit: Miss F., seen in January, this year, with acute poly-arthritis; practically every joint except the jaws being involved. She had been under the care of a member of this society for three weeks with no improvement. At the end of this

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period with no alteration in treatment, except arranging the bed to give an approximate measure of spinal support, and in addition splinting the arms and legs to give practical rest, the pain and swelling promptly subsided. After 24 hours no opiate was sought, although many doses were daily necessary before, and in three days all pain, swelling and discomfort had disappeared.

It is my belief that most sciaticas and lumbagos, not due to cord lesions, are generally caused by errors in bodily poise and balance, associated in the large majority of cases with osteal and periosteal changes in the vertebrae; changes which may generally be discovered clinically and demonstrated by the X-Ray. Changes in the bone which interfere with ordinary mobility—in fact the pain is to be considered as an expression of nerve-root irritation, due in one case to postural errors and in another to bony outgrowths, which either impinge on one another, or intrude upon the caliber of the root channels and afford roughened and irregular passage. In the foregoing, we find sufficient reasons to account for the direct production of pain, backaches, neckaches, legaches, and sciaticas or crural neuralgias, as well as for various parasthesias and nerve errors which may often be thought suggestive of cord lesions. I would here repeat that bad postures alone are often productive of joint stress sufficient to give severe pain, lasting for long periods, as has ben instanced in another paper this evening; but simple static strain can generally be distinguished by the fact that the patient can be taught to voluntarily hold the joints in alignment and secure, temporarily at least, poise and balance and cessation of pain.

In addition to the primary causes of pain which we have been discussing, we have a secondary chain, which I personally take to be dependent upon the primary. I have reference here to the symptoms following the so-called sacro-iliac slip or strain. In this class of cases, the osteopath has found a fruitful field to cultivate, and he has found it so productive, because first he has recognized the mechanical error and has learned how to remedy it, and more particularly because the regular medical man has absolutely failed to appreciate that any change exists, and failing this has no appropriate remedy to offer. In the osteopathic parlance, this condition is known as dislocation of the os immominata, and while you may perhaps cavil at his phraseology, the pain-racked patient will not cavil at his treatment, which so often gives relief. So far as I know there is no class of troubles more frequent, that gives so much anguish to the sufferer, and especially to women, than this sacro-iliac slip, and no one in which proper treatment gives more relief. Personally I am of the opinion that primary disease of this joint is one of the rarest of joint diseases, while pain, due to stress of the joint, is one of the commonest troubles.

Sacro-iliac slip in my experience is associated with, or rather dependent upon, two conditions which are essentially different in character. While symptomatically often alike, from a therapeutic standpoint the differences must be kept clearly in mind, for relief depends upon a definite recognition of the mechanical conditions presented in the particular case. Both causes favor, or rather compel, changes in the upright posture which materially alters the usual strain and calls for some readjustment in the structure in order that the approximate balance shall be maintained. This necessary readjustment, apparently, is most easily arranged in the relation which the ilio bears to the sacrum; and the relief of pain in either type depends upon securing the normal approximation and relations of the bones and maintaining a comparative normal posture, balance and poise thus removing the stress and strain which led to the altered joint relations. How this is brought about depends of course, upon which type of case caused the slip. In the one class, and this occurs generally in adult males, and especially around and after middle age, on account of an osteo-arthritis of a hypertrophic type, the spine and hips have lost a considerable part of the normal mobility. By reason then of the ordinary demands for somewhat of a normal range of movement, an effort is made to furnish some of the lost spinal and hip motion by sliding or tilting the sacro-iliac joint. It is therefore evident in this class that the more active physically the patient is, the less pathology necessary to give pain. Conversely, the less active the individual, the less pain, with the same amount of pathology. In a young, active man a loss of 20% of normal motion, an amount that often escapes observation, may give incapacity while in the more old and less ambitious, motion up to 75% of the normal may be lost without any particularly severe pain being produced, or rather complained of.

The other type which accompanies general joint and muscle relaxation is seen generally in the female—in young girls of the wobbly knockkneed class—of the squab-age, when they don't know whether to stand or loll, whether to hold their heads up or down, and so hang it a little on one side. Such girls have no definite curve to their backs—no poise, and no balance when in the upright position. When standing they present often a sway-back and at other times may be a straight back, and when sitting they offer a low kyphotic curve. The condition occurs in women of any age, who are relaxed from obesity, from carrying children, from turning toes out at a bad angle with pronated feet and valgus knees. It is favored by bad footgear, and especially so by wearing corsets devised to contract the waist and press firmly on the iliac crests. Under such circumstances the femora support the pelvis at a bad angle, which together with the increased pressure over the iliac crests, tend to separate the sacro-iliac joints, causing strain on the joint ligaments and an erect posture is only maintained under great stress. There is a sub-type of the latter condition, which although not nearly so frequent, is still not rare, and must not be forgotten. This consists in such an exaggeration of the lordotic lumbar curve that the 4th and 5th lumbar vertebrae drag somewhat forward on the sacrum. The abdomen is pendulous, or somewhat full or protuberant, the gait is a little waddling, and the iliac crests are promi-

nent—there is genu valgum and pronated feet. It cannot be considered a true spondylolisthesis, yet I am in the habit of designating it a "potential one." The symptoms are urgent and the suffering extreme. A typical case of this variety has lately appeared in press as a unique instance of intermitten claudication in the lumbar region."

I have presented cases as types, but I am not to be understood as saying that one type is confined to males, and the other to females, for such would not be true. The female may be as stiff-backed as the male, and ofttimes the male presents a weak back and turns out his toes.

It can readily be appreciated then, that generally speaking, I look upon sacro-iliac slip as somewhat compensatory, for spinal and hip joint rigidity, in one set of cases, and as the result of stress in a general joint and muscle relaxation, in the other. Hence it also follows that the details of treatment must be different in the two types, while the principles are similar. In one instance, the relaxed type, with the body free to obey mechanical changes of weight and gravity, balance, poise and alignment can often be secured by carefully selected shoes and a well devised corset. Shoes selected to carry the center of gravity over, or better a little to the outer side of the center of weight bearing, as well as backwards over the ankle. A corset devised to hold the pelvis below a horizontal line through the centers of the sacro-iliac joints, snugly, and also lift the abdominal content upwards and backwards. A corset with a smaller low pelvic circumference, and a larger iliac crest and waist circumference. Such a corset favors the carrying of weight over the center of support, and gives elastic movement and ready poise which tend to avoid stress and strain, with, of course, the elimination of stress symptoms. This problem is generally an easy one, the chief bar to its success being the vanity of the sex which suffers most from it, and the desire to appear as close to the prevailing mode as is possible. A belt giving support analagous to the corset described, I find is often worn by blacksmiths and by workers in many heavy trades. Its value to them is unquestioned.

In the other class of cases with osteal changes and rigidity, the principles are similar, while the solution of the problem is not so easy. Position, alignment and shifting of weight are not readily secured, hence proper poise and balance are harder to obtain. The attempt must be made, however, for pain cannot be safely and surely relieved, during the hours of work, with the structure out of alignment and subject to unwonted stress. On account of the irregular rigidity of the structural column in these cases, balance does not promptly follow change of base, for you must remember that while rigidity adds to stability in a fixed column, in proper alignment, with a fixed base, its place is taken by elasticity, if the column is intended to rapidly and irregularly change its position, and this is especially so if the structure is out of alignment, and more especially so if its rigidity is irregular; as happens in the vertebral column in osteo-arthritis. So when pain is the result of stress associated with mal-alignment of supports in the structure, then proper alignment is the first essential, and after this, balance and poise is favored if the vertebral column is given its normal curves. Again elasticity is favored and stress lessened by proper curves. So it is necessary when proper poise is not permitted by reason of mechanical barriers in the joints, that approximately the normal position be secured, even by force carefully applied under full anesthesia if necessary. Carefully applied force to secure the desired position is what is advocated in these conditions, after a careful estimate, of course, of what is necessary to get balance; not, however, crude traumatism (under half anesthesia) of tender joints, which could hardly be expected under these circumstances to have a happy result. After careful reposition, in a few cases perhaps only massage and exercise may be necessary, but these cases are few. Generally speaking, however, rest in bed after careful splinting is wise for some considerable time, followed by a brace and later by massage and exercise, or perhaps by massage and exercise without a brace, as the judgment may elect in the particular case. In this simple manner most of the backaches, not dependent upon gross pathological changes; most sciaticas, not due to cord lesions, may be promptly relieved and symptomatically cured.

Discussion.

Dr. Harold Brunn: The papers of Drs. Crane and Hunkin have so far covered the field of backaches that I can only accentuate a few of the points which have already been brought before our consideration. Gynecologically speaking, it is probably the most frequent symptom complained of and has for its cause a variety of conditions. At the present time, through the writings of Goldthwait, we have all been particularly interested in backaches, which have for a cause a relaxation of the sacro-iliac synchondrosis. The discovery and cure of backaches from this cause is very gratifying, but, on the other hand, we must not lose sight of the many other conditions which may play an important part in their production; for instance, a case recently under my care with malignant metastasis to the spine, for a long time overlooked; again, a fibroid recently removed from a young woman who two years previously had tried orthopedists and numerous insoles to cure persistent backache without success. In the male, prostatic congestion and prostatic carcinoma are frequently overlooked, but not so much so, perhaps, as seminal vesiculitis. In fact, any congestion or distension may bring on backache. Frequently, as in a recent case seen with Dr. Hunkin, there is evidence of both pelvic disease and spine trouble, and it is difficult to decide what procedure should first be employed for the relief of the patient. In this case Dr. Hunkin's brace has so far relieved the back, and she bears her pelvic adhesions with comparative comfort, the intense backache having been relieved. The most important single factor in women with backaches, my histories show, dates from childbirth, especially when childbirth has been difficult or where one child has followed another in rapid succession. These cases almost always have relaxed sacro-iliac joints. We must remember that these are true joints which loosen up with advancing pregnancy, and after pregnancy a tight strap or band should encircle the pelvis at about the level of the great trochanters, so that firm pressure is made, permitting the joints to get back into their normal tone. If the abdominal binder, which tends to press the

uterus backward, were discarded and the sacro-iliac band used instead, many backaches would be avoided. To sum up, if we are to relieve the greatest number of our patients suffering with backaches, we must keep in mind not one or two conditions in which we are especially interested, but rather keep an open mind and give consideration to the many factors which may enter into the production of this frequently complained of symptom.

Dr. J. Wilson Shiels: Dr. Crane writes a paper well timed, well worded, and full of purpose. I congratulate him; he is not suffering from acute rehashitis. It would seem the particular duty of every thoughtful physician to rid medical phraseology of loose terms tending to shed false light upon cause, the only true basis of rational therapy. Dr. Crane to-night rings down the curtain on the term "rheumatism." Let others ring it down on such terms as "dyspepsia," "biliousness," etc. And let another strong man substitute the word "honesty" for "ethics," and yet another clear the Hippocratic oath, replacing it with "principle" and "common sense"; for nowadays, if a young man, thinking in all honesty that he has discovered something of benefit to humanity, and mindful of his oath to Hippocrates, declares it to the lay and medical world, if what he has to say is not in exact accordance wtih the prevailing fashion in science, he is immediately and unmercifully jumped on and given no credit for his desire to be true to his oath. All this is by the way and for which I ask pardon.

I agree that the term "rheumatism" must "walk the plank." Yet we must all admit that it has a certain value. The people use it and therefore we must if we desire to understand them. Thus do we get a full clinical picture of what they have suffered, for they associate the word with certain influences (such as exposure to wet, the consequences of dampness and fatigue or overwork) bringing about painful joints and painful muscles and stiffness. Therefore when the public answer that they have had rheumatism we get a composite picture of lowered health favorable to the action of micro-organisms or irritative toxins of tissue upbuilding. Or say when the public speak of "inflammatory rheumatism," however tautological the term may be to us, to them it is used to express high fever with great joint pain, an absolute sickbed illness. The moment we seriously think of these two terms in the same light as the public, we at once go some way back in the evolution of medicine, say the apothecary period of good Queen Bess, and content ourselves with symptomatic treatment; for example, the salicylates, aspirine, or some fascinating coal tar preparation. On the other hand, when we simply use the term to secure the history of joint pain and limitation of movement, and then use every sense possessed to reach the cause, we become what Dr. Crane desires us to be, modern medical men determined to advance our knowledge of joint affections by the heavy study of their cause and the exclusion of the word "rheumatism" or any collection of words that idle time and insult our medical mind. We all have a tendency, living in the X-ray period, to put the cart before the horse. I often wonder how much better than the average would be the orthopedic gentleman if he had not the advantage of an X-ray department. How many joints calling for immediate surgical interference would be hidden under a cast for weeks? The other day a patient came to me complaining of rheumatism of the elbow. She had suffered pain for many weeks; a handshake gave her pain, to turn a door knob gave her exquisite pain, and the pleasant occupation of brushing her husband's coat was now quite out of the question. She had what I should call free movement of the joint; and passive supination and pronation caused no trouble, but pressure of the external condyle gave definite pain. This was all I knew before the X-ray, and rheumatism would be the word, but after the X-ray I could wisely talk of the differential diagnosis of tuberculosis and osteomyelitis, and the need for rest, and the possible surgical end of the case, and the necessity of repeated X-ray plates to guide us, and so forth and so forth, for the external condyle showed thinning and the periosteum slightly raised. So the term "rheumatism" goes by the board. To take away without giving is but to rob, so we must try to replace the word. As I have said, rheumatism has, up to this time, conveyed to the mind all sorts of lesions. Truly it has been used as a classification. So in return I give my classification:

Division One—Skeletal Joints:

A. Acute Infective Polyarthritis (definite bacterial infection).
   Acute Noninfective Polyarthritis (irritative toxins of tissue metabolism).

B. Subacute Infective Polyarthritis (truly bacterial).
   Subacute Noninfective Polyarthritis (toxins of metabolism).

You will notice that by this method we are alert to the fact that bacteriological etiology has not been conclusively proven, and that many of the acute joint lesions seem more to be in a state of chronic irritation. So we open a better and more comprehensive field for treatment and cause. In other words, my arrangement makes it imperative not only to search for obscure portals of bacterial infection, such as the tonsil, the nose, the antrum, the gut, etc., but also to look diligently for faults in the building up of the body creating joint irritating toxins; to say nothing of old injury such as dislocation, fracture and the like.

Next in the order of this classification comes Chronic Deforming Anthritis.

1. Proliferative leading to fixation—Synovial or Interstitial.
2. Degenerative leading to deformity and bone formation. It will be noticed that this included all the old terms such as arthritis deformans, rheumatoid arthritis, osteoarthritis.

Division Two—Visceral Joints:

The pleura.
The pericardium.
The peritoneum.
The conjunctiva (representing the synovia).

Keeping this in mind very often gives the proper line of treatment for a conjunctivitis of "rheumatic form" or a pleurisy. And above all, when dealing with the acute infective polyarthritis we are on guard for the complications of pleuritic pericarditis. Coming to Dr. Hunkin's excellent offering, allow me to congratulate him. It must indeed be reward enough to have the patient declare before the meeting his gratitude for thoughtful work. I felt a sense of wonderment as the array of supported backs passed in front of us. How do they "now I lay me down to sleep," Dr. Hunkin? A woman died from a great hemorrhage of the bowel after a perfect operation—as the post mortem showed—for the removal of fibroids. Before this operation she had complained of backache and dyspepsia—both terms to be removed. It was found to be a duodenal ulcer. Again, distension of the descending colon often brings about great backache. I am afraid that such cases cannot be explained on the theory of error in statics.

Dr. H. T. Watkins: Mr. President, I accept with reluctance your invitation to speak after the gentlemen who have preceded me, for I feel that my lesser light must dim and be lost in the presence of Dr. Shiels' effulgence. Speaking from memory, I seem to recall Matthew Arnold's definition of criticism as "The attempt to direct attention to

and emphatize whatever was best and most beautiful in the world." I protest against the view that criticism is another expression for fault finding. Only in the spirit of Dr. Arnold's definition will I venture to emphasize a few points which appear in Dr. Crane's and Dr. Hunkin's papers. Dr. Crane spoke of erythromelalgia (intermittent limping). Pathognomonic of this condition is the fact that the pain brought on by walking occurs after exactly the same distance has been covered each time. If the patient was taken with these pains after walking a block and a half one day, the next day, or the next time he walked a block and a half, he would again be taken with the same pains. Speaking of backache; Goldthwait, in that series of original publications upon which all subsequent writers have drawn for both inspiration and fact, has called attention to the observation that post-operative backache is in reality the result of a sacro-lumbar or sacro-iliac strain, these strains or sprains being the consequence of permitting patients to lie upon operating tables, under deep narcosis, in exaggerated postures and without either support under the small of the back or relaxation of the ileo-psoas by means of a pad under the knees. While we are considering the reposition under anesthesia of sacro-iliac slips, or the re-constitution of lumbar spinal curves, attention should be drawn to the fact that these procedures must be undertaken with extreme caution. Dr. Goldthwait, in one of his latest publications, reports at great length the following case: A patient had sustained a sacro-iliac slip; the usual reposition under narcosis was accomplished. The reposition was not permanent, however, but upon subsequently attempting a second reposition the patient became paralyzed. A further study of the case showed that an abnormally long transverse process of the fifth lumbar vertebra had impinged upon the upper surface of the sacrum and, during the manipulation, had acted as a fulcrum by means of which a dislocation of its articulating processes with those of the sacrum was brought about. This eventuated, through compression of the cauda equina, in a paraplegia. An experience of my own is worth mentioning, and I shall be interested to hear from the speakers what untoward results they, too, may have seen. About six weeks ago I was re-constituting one of these lumbar curves for an osteo-arthritic condition of a patient's spine. I had the patient anesthetized and placed prone upon two tables so that his chest was upon one and his thighs upon the other. Then with the utmost caution I forced the lumbar spine to assume its proper configuration; there were the usual dry crunching sensations under my hands, and at once the man turned blue-black and for a moment stopped breathing. I confess I was very much alarmed. He recovered immediately, however, and a jacket was applied upon the Goldthwait frame. Prior to this the man had had pains in the small of his back and running down his legs; pains which had incapacitated him for work and for which he had been medicated internally and also been given subcutaneous injections of various drugs, all to no purpose. As soon as the lumbar curve had been reconstructed the pains in legs and back disappeared. Dr. Brunn spoke of a lady who had been fitted with plates for flat feet in the hope that they would cure her backache, but whose backache had not been relieved until he had removed a large fibroid uterus. This reminds me of an occasion when a surgeon brought me a lady, saying that in the hope of relieving her backache he had removed at various times all her reproductive organs; he added that the backache continued and that he had come to believe the cause of it to be flat foot; and sure enough he was right! Massage and proper shoes relieved her of her backache.

Dr. G. J. McChesney: From the standpoint of orthopedics, I can thoroughly agree with the two papers read this evening. But I can also agree with the two gentlemen who have preceded me in the discussion who fear that we orthopedists are trying to occupy too large a share of the medical horizon. This, however, is a fault we share with all specialists, and time alone will give us all the proper perspective.

Dr. A. L. Fisher: I only want to emphasize one point in Dr. Crane's paper, and that is the relation of the sub-deltoid bursitis. To people not acquainted with this trouble, it is remarkable how frequently people come in with pains in their shoulders. This can nearly always be made out as subdeltoid bursitis and the pain subsides nicely when proper treatment is applied.

Dr. Adelaide Brown: Just a word on the question of using a heavy pelvic cinching belt on women getting up after confinement. I have used it attached to an ordinary long corset, successfully relieving pain over the sacro-iliac articulation with which the patient would ordinarily have dragged around for several months or years.

Dr. L. W. Allen: Going back to the enlargement of the joints, I think we would all like to know what these gentlemen consider the cause of the trouble. Whether it is not in the intestinal canal; whether there are no disorders of digestion which might produce these symptoms? We would like to hear concerning these cases of spinal osteoarthritis in which colon flushings, olive oil and care with the diet have caused the disappearance of pain and allowed the discontinuance of the supporting jacket.

Dr. Hunkin, closing discussion: I make a practice of never operating on women for such conditions without first letting them go through the hands of a gynecologist, and when we fail to cure the pain, we send them back, and ask the gynecologist to see if he could not revise his diagnosis. I gather from some things that have been said by Dr. Brunn that he thinks that wearing shoes of a certain type might cause fibroids to grow, but hardly suppose he means just that. Dr. Shiels says that if a man comes to him and says "rheumatism," he gets a certain mental picture and has something "to go after." I wonder what his mental picture would be, and just how he would "go after it." I have been much interested in what Dr. Shiels said about his visceral joints. I have not called it by the same name, but I have had about the same feeling as he has had about the resemblance between joints, and the abdomen, pleura, etc. Personally, I have a little classification of my own. In my classification, rheumatism is not a disease of bone. Rheumatism is a disease of fibrous tissues. Rheumatism affects joints because this kind of tissue grows around joints and bones, as around other cavities, but it does not affect bones either in the peritoneum or in the lungs or around the joints. When bone itself is enlarged in the process, it is a safe bet that it is not rheumatism which is affecting the patient. I would also like to call Dr. Shiels' attention to the fact that any student at the University, after looking at the X-ray picture, which he so graphically describes, would have made the diagnosis of "lues". The shoulders spoken of by Dr. Crane have only rarely in my opinion anything to do with the subdeltoid bursa, Cotton to the contrary notwithstanding. The great majority of them may be cured by forcible manipulation, followed by proper exercises, which process would, of course, interfere with and make worse the subdeltoid bursitis if it existed.

CHILBLAINS.*

By ERNEST DWIGHT CHIPMAN, M. D., San Francisco.

The chilblain is a seasonal dematosis. Quite as much as winter itch or recurring summer eruption it is limited by the calendar. It comes with the earliest frosts of autumn and fades away with the first balmy days of spring. It is seasonal also in the individual, showing marked preference for the very young and the very old.

The importance of the chilblain as a dermatologic affection is usually underestimated. Most textbooks dismiss the subject with a few curt remarks. The question of etiology is ignored and treatment consequently remains empirical.

Concerning the cause of chilblains we know much and we know little. We are quite exact, for example, in saying that cold, especially moist cold, is the immediate cause and yet, when we attempt to explain the predilection for certain individuals, we fall back on some general term as "tubercular predisposition" or "diminished resistance."

Certain facts relating to cold as an exciting cause are matters of common knowledge. While it is not a question of absolute temperature the coldest winters usually produce the most chilblains. What seems to be the most efficient factor is habitual exposure to cold. Workers out of doors, particularly those whose hands frequently get wet and who often dry them only partially are the chief sufferers.

In the consideration of predisposing causes we first of all recognize an undeniable hereditary influence. We recollect the old-time notion that the chilblain is an expression of scrofula and we see a corresponding tendency to modernize this view by classifying it as a tuberculide. Certainly some subjects of chilblains have a family history of tuberculosis. There are also subjects who later become tubercular. The same can be said of those who have warts, or acne or any skin lesion. It must be noted that the so-called scrofulous subjects are usually young persons with puffy faces, thick, pale skin, sluggish circulation and extremities which are habitually cold and easily cyanosed. These subjects of poor peripheral circulation are the chosen victims of chilblains. Their blood, as shown by Wright, takes twice or thrice the normal time to coagulate.

Aside from the facts pertaining to family history and type of subject, one argument in favor of the tubercular origin of chilblains is that which points to the physical resemblance they bear such tuberculides or near-tuberculides as erythema induratum and lupus erythematosus. Indeed Dubreuilh considers erythema induratum as a subcutaneous chilblain just as erythema nodosum might be called a deep variety of erythema multiforme, and as angioneurotic edema might be thought of as a deep urticarial reaction. Again, in a series of six cases in which a tuberculin test was applied, four gave positive reactions, a result of slight significance, however, when one considers the limited number of cases and the uncertainties of the tuberculin test. With the information we now possess the theory of the tubercular origin of chilblains must be considered as not proven.

Where, then, are we to seek the fundamental condition which makes the soil suitable for this particular eruption? Even though we may note an abundance of precise etiologic circumstances there still remains something vital in the way of predisposition which eludes us. Whether it has to do with some trouble of the physiology of certain glands, as the thyroid, or with alterations of the blood vessels or nerves, or with the composition of the blood, or with the intimate chemistry of the skin itself, we have yet to learn.

Luithlen of Vienna in studying the relation between the inorganic constituents of the skin and disorders of the general inorganic metabolism has found that distinct chemical alterations in the skin may be detected under radical changes in diet or after administration of acids or decalcifying oxalates. In an editorial review of this work the *Journal of the American Medical Association* says very truly: "We need to know not only that the skin becomes sensitive under certain conditions of diet or drugging but also why this reactivity develops and of what organic changes it is the expression." It may be that chilblains belong in that considerable group of dermatoses the cause of which we now vaguely call nutritional disturbance. And it may be that we shall soon substitute for this generality precise chemical terms.

The fact that Wright has observed an increase in the time required for the coagulation of the blood of chilblain subjects and that this time may be lowered to the normal by the administration of calcium chlorid is certainly significant. It strongly suggests that disturbance in the general inorganic metabolism may be reflected upon the skin and there determine increased vulnerability. Nor would the fact that chilblains occur particularly in the very young and the very old militate against such an hypothesis since in those epochs of life the skin is notably deficient in resistance, besides which chilblains are only relatively infrequent in adults.

In the ordinary form the evolution is rapid. A light red spot, perhaps no larger than a dime, appears. It quickly becomes elevated and infiltrated. The lesions may be single or multiple. There are certain sites of predilection. In the order of frequency these are the favored regions: fingers, toes, especially the dorsal surfaces, heels, ears, nose and cheeks. Exposed and ill defended parts are most often attacked.

Generally an individual who has chilblains in one spot has them in the same place year after year. This is not unlike the phenomenon in eczema

* Read before the Society of the San Francisco Polyclinic, October 9, 1912.

where one attack seems to predispose the particular site to subsequent eruptions either of the same or of another kind.

Subjectively there is intense itching and burning, especially upon going from a cold atmosphere into a warm room or near a stove, fireplace or any warming apparatus. Extreme cold causes a dull pain while heat is conducive to itching.

Certain forms may be designated as special because of regional or lesional peculiarities. Examples of the former are chilblains involving the prepuce or the popliteal space while variations from the normal in type are pea sized lesions which usually occur on the backs of the fingers and which have a striking resemblance to papulo-necrotic tuberculides and erythema multiforme, or large, infiltrated, sometimes ulcerated lesions covering the entire dorsal surfaces of the hands. The latter is the type seen most often in dispensary practice, occurring among cooks, dishwashers, stable men and those who are generally under-nourished and over-exposed. In some cases ulcerations occur which are healed with difficulty.

Senile chilblains have certain special characteristics. They occur most often on the hands or ears and are more diffuse as well as more swollen than the ordinary forms. They last until the advent of warm weather and leave marked atrophic spots. While not prone to ulcerate they often present superficial but painful little abscesses.

As a special form, or rather as a sequel, sometimes appear small angiomata or angio-keratomata, minute, superficial capillary dilatations with or without hyperkeratosis. In the flat form only small red spots the size of a pin-head are seen which on close examination show themselves to be made up of a collection of minute red points which partially disappear on pressure. In the typical angiokeratoma this little angioma is surmounted by an elevated, verrucous hyperkeratosis. They develop insidiously and slowly, following in the wake of chilblains and may persist to old age.

Two successive cases in my own practice showed the development of chilblains in syphilitic subjects. One occurred in diffuse form on the dorsal surface of the hands of an old man under treatment for gummata of the legs. The other was more interesting as it at first quite obscured the underlying condition. This was the case of a man 27 years of age who complained of diffuse lesions on dorsal surfaces of both hands extending well down toward the ends of the fingers. Its onset corresponded to a cold, damp spell of weather. Itching was pronounced and was aggravated by heat. Under treatment with 15% ichthyol paste the lesions gradually faded out until faint serpiginous outlines were all that remained. The subjective symptoms had quite disappeared. The configuration of the lesions was so suggestive that questions were asked which readily elicited a specific history of some eight years duration. The complete disappearance of the lesions followed the exhibition of mixed treatment.

Diagnosis: The patient usually comes with a ready-made diagnosis. The exceptional cases, however, are not always easy and may be prolific of much chagrin if not carefully considered. Several serious conditions may be confounded with chilblain. Raynaud's disease in certain slow and prolonged forms may be mistaken for senile chilblains. Its progress, however, is more intermittent and it is usually more painful although it may be of anesthetic type.

Lupus erythematosus, especially when attacking the fingers, offers some points of resemblance to chilblains. It persists through the summer, however, and is lacking in the intense subjective sensations of itching and burning. Lupus erythematosus, moreover, shows considerable scaliness and atrophic scarring not observed in chilblains.

Treatment: The treatment of chilblains suggests the oft repeated statement of Ambrose Paré: "I dressed the wound and God healed it." A French writer says: "Chilblains cure themselves but take their time."

Two remedial measures which are of great efficacy are often impracticable. They are rest in bed and change of climate. It is surprising how severe lesions are transformed by a few days' sojourn in a hospital. Rest in bed acts not only by virtue of the constant warmth which it affords but probably also by regulating the peripheral circulation.

Among general measures cod liver oil is valuable not for its immediate effect but to combat the predisposition. Indeed the liberal ingestion of fats and an ample diet in general seem obviously indicated in most cases not so much with the lesion as the patient in mind. Many specifics are vaunted, quinine by Brocq, nitroglycerin by Crocker, arsenic by many, calcium chlorid by Wright, etc. Quinine acts well in both lupus erythematosus and chilblains, a fact which leads Brocq to wonder if it will serve as an argument for classifying these two diseases, or at least some of their forms, more closely.

The first requirements in the line of local treatment are warm, properly fitting gloves and shoes and proper conditions of work. Protection must be sought against moisture as well as cold and close proximity to stoves, radiators, etc. must be avoided.

It is worthy of comment that most lists of remedies fail to specify the clinical aspect for which the particular substance is to be used. This is really the vital part of the subject. To say that certain medicaments are good for chilblains is to be both incomplete and confusing. With this thought in mind the following scheme is outlined: For simple erythematous lesions with itching and burning a calamine and zinc lotion containing 1½% phenol; for deep, infiltrated lesions ichthyol paste in from 10% to 20% paste; for ulcerations 10% solution of silver nitrate or pure balsam of peru. As a prophylactic applications of tincture of iodine or frictions with spirits of camphor followed by the application of an indifferent dusting powder as talcum or lycopodium.

From this list one should have no difficulty in selecting a suitable local application for an average case.

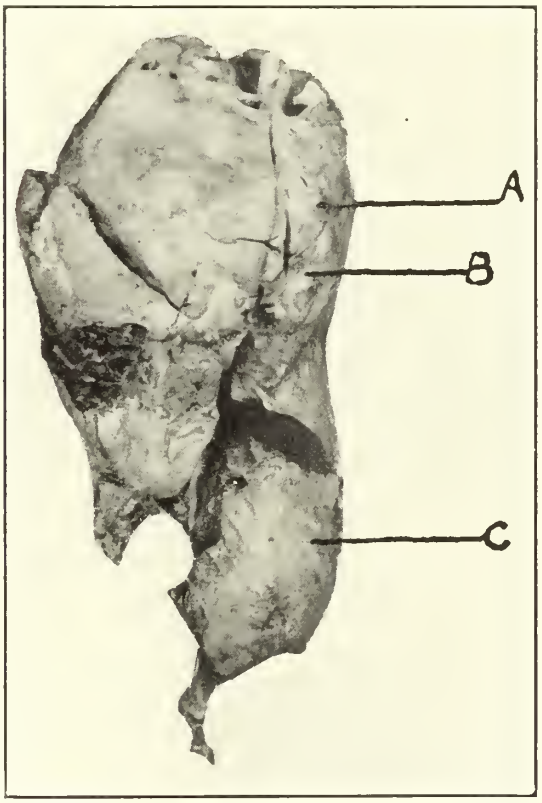
LYMPHOSARCOMA OF THE SUPERIOR MEDIASTINUM.*

By F. H. BOWLES, M. D., Oakland.

This specimen is from a man 62 years of age, of the superior mediastinum surrounding the great vessels and encroaching upon the heart and lungs.

The duration of symptoms was three years, the first being a pain and soreness behind the right ear which gradually extended to the muscles of the neck on the same side and down the corresponding arm. Next soreness and oppression developed in the chest, accompanied by coldness of the right hand. The patient felt perfectly well except for the pain and occasional disturbance to stomach, latter being relieved by diet. There was no loss of weight up to two years but at the time I saw him there was more or less of a cachetic appearance.

I first saw the patient in July, 1911, and at that time he had the following symptoms:



Pain behind the ear, being more acute in a draft; soreness of the cervical muscles, more marked on the right; lameness in both arms with sensation of cold, more marked on the right; a cough bordering on an aneurismal type, with expectoration of tenacious brownish sputum, the microscope showing pigmented epithelial cells without many bacteria; some soreness in the chest over and to the right of the manubrium, being slightly tender to palpation; and general weakness being very noticeable in the legs. At times there was palpitation of heart, but only upon excitement or strenuous exertion. Patient was well nourished, pupils equal but reacted slowly, right optic disc whiter than the left and sight correspondingly deficient; no noticeable change in vocal cords. There was slight edema of right hand without tender spots, prominence of the jugular veins without pulsation, and small dilated venules of the upper anterior chest wall more marked on the right. Upon percussion the arch dullness was materially increased, extending about an inch to each side of the sternal border. The heart was in its normal position without murmurs, but at the aortic area two sounds were distinctly heard, the first bordering upon a very soft murmur, being more of a roughened sound, the second accentuated. At the pulmonic area both sounds were heard without murmurs. The abdominal organs were neither enlarged nor tender. Reflexes were present without deviation from normal. The blood pressure on the right arm was systolic 150, left arm 140. The urine and blood were normal except for a slight secondary anemia. Wassermann was negative.

A diagnosis of aneurism of the arch of the aorta was made with question as to tumor and an X-ray picture helped to verify the diagnosis. Under the fluoroscope a distinctly pulsating shadow was found.

From this time on the patient grew worse, edema becoming more marked, extending to the extremities, neck, head and upper part of chest in front and along the mid-axillary line to the crests of the ileum. The lower extremities showed no edema. The last three months the patient was confined to the bed, as this seemed to give the most comfort. Twice while in bed there was exaggerated palpitation of the heart lasting from six to twelve hours, each time leaving him in a weaker condition. Pain in the neck, arms and chest became very intense, and marked tenderness developed in the hepatic region during the last few weeks.

At the time of death the arms were twice the normal size, the left now being the larger. A great amount of edema of both sides of the chest extending down to the iliac crests, a slight edema of the anterior chest wall, face and neck.

The dullness did not enlarge upon percussion, but there developed a distinct systolic murmur and a diastolic shock over the lesion which so frequently develops in aneurism. There was more or less of an expansile heaving to the chest with slight bulging at the manubrium.

At autopsy the heart was found slightly pushed downward by a large mass which was not only attached to the base of the heart but to the margins of the lungs, trachea and sternum. Upon closer examination the mass was found to be more or less encapsulated and enveloping all the vessels of the heart. The veins were compressed but the arteries remained patent.

The heart showed an old adhesive pericarditis, lungs free except for the marginal attachment to the tumor and metastasis in the liver. Retroperitoneal lymph glands were enlarged, other lymph glands were conspicuously absent.

Section of the tumor shows lymphosarcoma arising probably from the lymph glands with similar structure in a metastatic nobule of the liver.

* Read before the San Francisco County Medical Society.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Phylacogens.

The term phylacogen is derived from two Greek words meaning phylaxin-producer. "Phylaxin" is the name applied by Hankin to antitoxin or a defensive proteid found in animals that have acquired an artificial immunity to a given infectious disease. The word phylacogen has been coined to distinguish these new bacterial derivatives from other bacterial therapeutic agents.

The phylacogens are neither bacterial vaccines nor "sera" as commonly understood. They are sterile aqueous solutions of metabolic substances or derivatives generated by baceteria grown on artificial culture media. The bacteria, first killed, are removed by filtration through porcelain.

They are prepared from a variety of pathogenic bacteria—as the several staphylococci, streptococ-

cus pyogenes, bacillus pyocyaneus, diplococcus pneumoniae, bacillus typhosus, bacillus coli communis, streptococcus rheumaticus, streptococcus erysipelatis, etc. The organisms used are of various strains and from cultures derived from various sources. The organisms are present in the material before filtration and dilution, in approximately equal proportions. Thus it will be seen that these products are both "polyvalent" and "mixed." (See Cal. State Jour. Med., April, 1912, p. 167, for definitions.)

The cultures are incubated at 37° centigrade for 72 hours or longer, after which 0.5% phenol is added to the fluid as a preservative. This is then filtered through porcelain. The basic phylacogen made in this manner is used in the preparation of the several specific phylacogens and is called "mixed infection" phylacogen. The specific phylacogens are prepared by adding to this basic material equal amounts of the filtrates obtained by growing and treating the organism considered to be predominant in the pathological condition. For example, in the preparation of typhoid phylacogen, the b. typhosus is grown and treated like the several organisms entering into the preparation of the basic phylacogen. The filtrate obtained from the preparation of the typhoid organism alone, is added in equal amount to the basic phylacogen, and the resulting product given the specific name "typhoid phylacogen." These products have been shown to retain their potency for at least two years.

The principle upon which the use of these phylacogens is founded is the theory of multiple infections. It is advanced that practically all acute and many of the chronic diseases are caused by the metabolic products of bacteria; that the human subject is at all times the host of micro-organisms that are pathogenically latent but capable of setting up a diseased process under certain conditions; that the growth of infecting micro-organisms can be arrested and their effects neutralized by products derived from their development in artificial culture media.

It is further advanced that all infections are "mixed" infections; that except in rare instances, there is no such thing as an infection by a single species of micro-organism; that while one species may predominate, the pathological process engendered by it is accelerated and intensified by the presence of organisms of other species—in other words, that in the course of an infectious disease the symptoms are due not only to the effect of a single species of organism (the specific or predominant infection), but to the influence of other organisms whose pathogenic role is not insignificant and which must be reckoned with in any successful scheme of therapeutics.

In accordance with these theories, it is held that certain diseases are objective and subjective symptomatic manifestations of the preponderance in the subject, of the toxic and destructive products of the peculiar species of organism to which the etiology of the disease is ascribed—as for example: b. typhosus in typhoid fever; d. pneumoniae in pneumonia; b. tuberculosis in tuberculosis, etc.; and also that the symptoms are due in part at least, to the destructive material produced by complicating organisms which are always present in great variety and number.

It is advanced that many of the most notable symptoms in pulmonary tuberculosis—such as loss of weight, high temperature, disturbance of circulation, purulent expectoration, destruction of tissue, etc., are due to the complicating organisms, and if the so-called "mixed infection" can be checked or eliminated, efforts may be directed against the b. tuberculosis with far greater success than has hertofore been possible in the treatment of this condition.

The phylacogens are administered either subcutaneously or intravenously, the former being the preferred method. The intravenous administration of phylacogen is followed by constitutional reactions much more pronounced than those following the subcutaneous method and in certain cases is decidedly contra-indicated and even dangerous.

The subcutaneous injection of phylacogen is followed by local and constitutional reactions. These may vary in intensity from very slight to quite severe reactions. The usual effect of the subcutaneous injection is a sense of fullness at the site of puncture followed in from one-half to four hours by a chilly sensation which may merge into a distinct chill. In six to twenty-four hours redness and swelling appear at the point of injection, attended with pain, though there may be only tenderness on pressure. Nausea and sometimes an increased number of bowel movements are observed. Frequently there will be numbness around the site of the injection, and at times depression and a pronounced feeling of numbness over the entire body. These phenomena usually pass away in a few hours. Following the reaction the temperature, pulse rate and number of respirations decline and there is a decrease of blood pressure.

The usual effects of intravenous injection are as follows: Within thirty minutes (in some cases one to four hours), the subject feels chilly—a sensation which rapidly becomes more pronounced. He will slip down in the bed, draw the clothing up around the neck, turn over on his side, flex the thighs upon the abdomen, and by this time he will be in a decided chill which will become more and more pronounced until it assumes the proportions of a severe rigor—at times so violent as to shake the bed. This usually lasts from twenty to sixty minutes and gradually passes off. The subject then becomes drowsy, breaking into a profuse perspiration and falling asleep.

Following the reaction, the temperature, pulse rate and number of respirations decline, and there is a decrease of blood pressure as in the subcutaneous method, excepting that these effects come on in a shorter time. As yet, there is no proved scientific explanation of the exact mode of action of these products. It has been observed that those cases respond best which react most strongly to the phylacogens, and there seems to be a direct relation between the vigor of the reaction and the relief of the symptoms.

The usual subcutaneous dose is 5.0 Cc. to 20.0 Cc. daily. It is customary to begin with 5.0 Cc., increasing to 10.0 Cc. on the second or third day.

The usual intravenous dose is 0.5 to 5.0 Cc.—beginning with 0.5 Cc. and increasing gradually to 5.0 Cc. The usual interval between doses is twelve to twenty-four hours—in some instances thirty-six to forty-eight hours.

It would seem that a total disappearance of symptoms does not necessarily indicate a permanent cure, but in common with other forms of bacterial therapy, it is necessary to persist in the treatment and in the employment of adequate dosage.

These products have been employed in the treatment of various acute and chronic infections. Their successful application is dependent, like the bacterial vaccines, upon accurate clinical and bacteriological diagnosis.

To the writer's knowledge but two papers have appeared in current literature, bearing upon this subject. One is to be found in the California State Journal of Medicine, April, 1912, p. 160; and the other in The Therapeutic Gazette, April 15, 1911, p. 257.

PACIFIC ASSOCIATION OF RAILWAY SURGEONS.

The Tenth Annual Meeting was held August 30th and 31st at the St. Francis Hotel, San Francisco.

First Session—2:00 p. m., August 30th.

1. President's Address—O. D. Hamlin, Oakland.
2. "Tuberculosis Among Railroad Employees"—Jno. C. King, Banning.
3. "Fractures of the Patella, Treatment of"—Rexwald Brown, Santa Barbara.
4. "The Treatment of Surgical Shock"—R. L. Ramey, El Paso.
5. "Dangers of Unguarded Railroad Crossings"—David Powell, Marysville.
6. "Report of a Case of Multiple Sarcomata"—J. H. O'Connor and W. T. Cummins, San Francisco.
7. "Hook Worm Disease and Its Importation Into California" (Illustrated Lantern Slides)—J. W. Colbert, Albuquerque.

Second Session—2:00 p. m., August 31st.

8. "Observations on Symptoms and Treatment of Suppurative Appendicitis"—R. T. Legge, McCloud.
9. "Some Conclusions Regarding the Present Knowledge of the Veriform Appendix"—C. J. Teass, San Francisco.
10. "A Pathological and Sanitary Study of a Typhoid Outbreak"—W. T. Cummins, San Francisco.
11. "A Few Remarks on Typhoid"—G. R. Carson, San Francisco.
12. "Supra-pubic Prostatectomy"—Guy Cochran, Los Angeles.
13. "The Eye and Its Minor Injuries"—A. C. Seely, Roseburg.
14. "Fractures" (Illustrated Lantern Slides)—W. B. Coffey, San Francisco.
15. Demonstration of Cases—Howard Morrow, San Francisco.
16. "Salvarsan, with Report of Cases"—A. W. Morton, San Francisco.

(Note.—The papers and proceedings will appear in subsequent issues of the JOURNAL.—Ed.)

Very Important!

SEE ADVERTISING PAGE XXI

FOR A MOST IMPORTANT

Notice!

MUSCLE CHANGES IN TUBERCULOSIS.

Pottenger, in an article "Muskelspasmus und Degeneration," published in Band 22, Heft 1, of Beitrage zur Klinik der Tuberculose, claims that wherever lung or pleura are actively inflamed a spastic condition of the muscles of the neck and thorax of the affected side develops. If the process is a chronic one a degeneration of the respective muscles takes place. It is necessary to study the normal conditions in adults and children in order to recognize the pathological changes. The patient must be in a comfortable, relaxed and sitting position and must breathe quietly and naturally. Then all one-sided changes, as for instance, hypertrophic condition of sternocleidomastoideus and scaleni or spastic condition of trapezius in active tuberculosis of apex or rigidity of m. pectorales in deeper and more acute processes are easily recognized by inspection and palpation. In chronic processes the muscles degenerate gradually and lose their elasticity and tonus. A spasm of the muscles is produced because the inflamed lung carries impulses into the spinal cord through the n. sympathicus, where the cells of the affected side receive a certain irritability; this manifests itself in sensoric disturbances, peripherically, through the cornu posterior (according to Head). Degeneration of the muscles appears through the cornu anterior. The degeneration of the muscles after a prolonged condition of irritability is similar to the degeneration after excessive work.

The author reports a number of cases in which he shows that the condition of the muscles can reproduce the condition of the lungs in incipient, in moderately advanced and in very advanced cases of tuberculosis. Afterwards he describes the different changes in the muscles as cause for developing abnormal carriage of the head, abnormal shape and movement of the chest, and also abnormal shape of the upper thoracic aperture. These changes again modify the findings of percussion and auscultation. Over a contracted muscle the percussion gives a higher note and increased resistance to palpation. The breathing sounds over a relaxed muscle are soft; over a contracted muscle they are harsh with prolonged exhalation but often very distant. Light palpation is considered the best method to recognize differences in the consistency of the muscles and lungs.

MAX ROTHSCHILD.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.,

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(Signature of editor, publisher, business manager, or owner.)

Sworn to and subscribed before me this 4th day of October, 1912.

(Seal) EDITH W. BURNHAM,

Notary Public in and for the City and County of San Francisco, State of California.

(My commission expires January 30, 1912).

Form 3526.

SOCIETY REPORTS

ALAMEDA COUNTY.

The September meeting was held on the 17th. The program consisted of a paper by R. A. Archibald, D. V. S., on The Apparent Inconsistencies of Biologic Diagnostics.

(a) Principles Involved in Complement Fixation and Anaphylactic Reactions.

(b) The Difference between Allergic and Immune Reactions.

(c) Why such Diagnostic Tests as the Tuberculin, Mallein, Wassermann, etc., occasionally fail to give Positive Results in Cases Presenting Specific Clinical Symptoms.

(d) How the Apparent Inconsistencies may be Overcome.

The paper was discussed at length by Drs. A. A. Alexander, T. H. Clark, C. H. McVey, and W. H. Streitmann.

The October meeting was held on the 22nd of the month with the following program arranged by Dr. T. C. McCleave.

1. Infection of the Urinary Tract in Women. Dr. David Hadden.

2. Hemorrhagic Disease of the New Born. Its Treatment by Transfusion. Dr. T. C. McCleave.

3. Recent Advances in our Knowledge of Infantile Paralysis. Dr. Dudley Smith.

The discussion was participated in by Drs. W. H. Strietmann, T. J. Clark and others.

Mr. C. A. S. Frost, attorney for the State Board of Medical Examiners, addressed the Society "On what has been done and what is expected to be done in regard to the matter of prosecuting illegal practitioners," a work in which this Society is now engaged.

Dr. Chas. L. Tisdale also spoke explaining the position of the State Board of Medical Examiners in regard to this matter.

PAULINE S. NUSBAUMER.
Secretary.

THE CALIFORNIA ACADEMY OF MEDICINE.

The California Academy of Medicine held its regular meeting on Monday evening, October 28th, in the rooms of the County Medical Society.

The following scientific program was given:

1. Experiments Dealing with the Physiology of Voluntary Movements. Sol Hyman. Discussed by S. S. Maxwell and Sol. Hyman.

2. Two Cases of Diaphragmatic Hernia. I. W. Thorne. Discussed by G. Ebright, R. L. Wilbur, H. Gibbons and A. J. Lartigau.

Refreshments were served at the close of the meeting.

COOPER CLINICAL SOCIETY.

The Cooper Clinical Society held a meeting on Monday, November 4th, at the Medical Department of Stanford University. The following program was given:

1. Presentation of specimens. Dr. W. Ophuls.
   (a) Abdominal aneurysm,
   (b) Perforation of small intestine.

2. Congenital Absence of Both Clavicles. Dr. G. J. McChesney. Discussed by Drs. Harry Sherman, Frank E. Blaisdell and G. J. McChesney.

3. The Diagnosis of Gall Stone in the Common Duct. Dr. Wm. F. Cheney.

Discussed by Drs. W. I. Terry, Harry Sherman, Barry, Ryfkogel, and W. F. Cheney.

Refreshments were served at the close of the meeting.

SOCIETY OF THE SAN FRANCISCO POLYCLINIC.

October 9, 1912.

1. Presentation of a Patient with a Tumor of the Cauda Equina. Wilfred F. Beerman. Discussed by H. D'Arcy Power.

2. Angina Pectoris Vasomotoria, with demonstration of a case. L. D. Mead. Discussed by Philip King Brown and H. D'Arcy Power.

3. Exhibition of Patient with Cancer of the Lip. Discussion of operative procedure. H. A. L. Ryfkogel.

4. Surgery of the Large Intestine, with report of an interesting case. F. B. Carpenter. Discussed by Gilbert M. Barrett.

5. Instructive Factors Relative to Pernio. Ernest D. Chipman. Discussed by Martin Regensburger.

6. Syringomyelia. Exhibition of a Pathological Specimen from a case of Syringomyelia. Consideration of sensation of Spinal Cord. Milton B. Lennon.

Refreshments were served at the close of the meeting.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of September, 1912, the following meetings were held:

Section on Medicine. September 3, 1912.

1. Operative Treatment of Claw-Foot. Exhibition of Case. Dr. J. T. Watkins.

2. Demonstration of Case of Hydroa Vacciniforme. Dr. E. C. Chipman.

3. Report of Case of Noguchi's Luetin Reaction. Dr. H. E. Alderson.

4. The Etiology and Treatment of Acne. Dr. E. D. Chipman. Discussed by Drs. Douglass Montgomery, H. E. Alderson, Cullen Welty, Howard Morrow, J. C. Pickett, and E. D. Chipman.

5. An Instance of Hypersensitiveness to Homatropine. Dr. Douglass Montgomery. Discussed by Drs. E. D. Chipman, J. C. Pickett and D. W. Montgomery. (To be published in California State Journal of Medicine.)

6. Granuloma Inguinale Tropicum. Dr. D. Friedlander. Discussed by Dr. E. D. Chipman. (To be published in California State Journal of Medicine.)

7. Lantern Slide Views of Cutaneous Lesions. Dr. Howard Morrow.

Regular Meeting. September 10, 1912.

The Relation of the Academic Medical School to the Medical Community.

1. Herbert C. Moffitt, Dean of the Medical Department, University of California.

2. David Starr Jordan, LL.D., President Leland Stanford Junior University.

Discussed by Drs. A. A. D'Ancona, R. L. Wilbur, F. P. Gay, W. W. Kerr, Langley Porter and D'Arcy Power.

After the discussion, Dr. Richard C. Cabot, of

Boston, spoke of the academic medical school in relation to the medical profession and to the community, and gave an outline of the social service work at the Massachusetts General Hospital.

Section on Surgery. September 17, 1912.

1. Ileo-Appendicular Hernia. Dr. Lewis W. Allen.

2. Factors in the Physiology of Bone in Relation to Surgery. Dr. Arthur L. Fisher. Discussed by Drs. Raymond Russ, S. J. Hunkin, Sol. Hyman and A. L. Fisher.

3. On the Operative Treatment of Claw-Foot. Dr. J. T. Watkins.

Eye, Ear, Nose and Throat Section. September 24, 1912.

1. Dr. Kaspar Pischel showed three cases of glaucoma on which he had performed Elliott's trephining operation.

2. The Technic of Reclination in Tremulous Cataracts. Dr. P. De Obarrio. Discussed by Drs. Kaspar Pischel and P. De Obarrio. (To be published in California State Journal of Medicine.)

3. Report of the Seventeenth Annual Meeting of the American Academy of Ophthalmology and Oto Laryngology. Dr. H. B. Graham.

4. Ear Noises. Dr. M. W. Frederick. Discussed by Drs. H. B. Graham and M. W. Frederick. (To be published in California State Journal of Medicine.)

During the month of October, 1912, the following meetings were held by the San Francisco County Medical Society:

Section on Medicine, Oct. 1, 1912.

1. Two Cases of Cerebellar Disease; with Autopsy Reports. Dr. W. F. Schaller. Discussed by Drs. Sol. Hyman and W. F. Schaller.

2. Report of a Case of Duodenal Stenosis with Gall Stones; Cured by Operation. Dr. W. C. Voorsanger and Dr. C. C. Levison. Discussed by Drs. J. L. Whitney, Francis Williams, Saxton Pope and W. C. Voorsanger.

3. A Case of Angioneurotic Edema Treated with Horse Serum. Dr. Francis Williams. Discussed by Drs. L. Eloesser, L. Breitstein and Francis Williams.

Regular Meeting, Oct. 8, 1912.

1. Demonstration of Case of Complete Achylia with Diabetes. Dr. W. C. Alvarez. Discussed by Drs. L. Eloesser, H. D. Kugeler and W. C. Alvarez.

2. Pancreatic Cysts, with Unusual History. Report of Case. Dr. Fred. Fehleisen. Discussed by Drs. S. J. Hunkin and W. C. Alvarez.

3. Report of Treatment of Intracapsular Fracture of Hip, with Specimen. Dr. H. B. A. Kugeler. Discussed by Drs. S. J. Hunkin and H. B. A. Kugeler.

Special Meeting, October 15, 1912.

At this meeting, Professor Carl von Noorden of Vienna spoke on Modern Aspects of the Theory and Treatment of Diabetes. The attendance was the largest in the history of the Society, many coming from Alameda and Santa Clara Counties.

Eye, Ear, Nose and Throat Section, Oct. 22, 1912.

1. Presentation of Cases Vernal Conjunctivitis; Retinitis Pigmentosa; Trauma. Dr. Victor Lucchetti. Three Cases of Skin Graft Operation for Mastoid. Dr. H. B. Graham.

2. Vestibular Concussion. Dr. G. P. Wintermute. Discussed by Drs. H. L. Wagner, H. B. Graham, and G. P. Wintermute.

3. The Relation of Blood Pressure to Tinnitus. Dr. H. Y. McNaught. Discussed by Drs. H. B. Graham, H. L. Wagner, W. F. Blake and H. Y. McNaught.

Section on Urology, October 29, 1912.

Symposium on Nephroptosis: i. Medical Aspect. Dr. Harold P. Hill. ii. Surgical Aspect. Dr. Harold Brunn. iii. Urological Aspect. Dr. R. L. Rigdon. Discussed by Drs. J. H. Barbat, M. Krotoszyner, J. L. Whitney, H. A. L. Ryfkogel, J. Rosenstirn, H. P. Hill, H. Brunn and R. L. Rigdon.

BOOK REVIEWS

A Doctor's Table Talk. By James G. Mumford. 12mo. Linen. 1912. Houghton Mifflin Co. Boston and New York. Price, $1.25.

A little book of essays, reflective, reminiscent and admonitory by a successful surgeon. Written in firm, clear, but somewhat ornate English;—no, in firm, clear, but somewhat ornate American, for there is such a tongue.

The influence of Sir Thomas Browne, whom the author frequently cites, and of O. W. Holmes crops up all through the book. Mumford is at his best when he talks shop—most men are. "Doctor and Patient" and "Some Doctors and Their Troubles" are particularly good. The book will be of interest to every doctor and of considerable profit to many young ones. L. E.

Studies on Cardiac Pathology. By George William Norris, A. B., M. D., With Eighty-five Original Illustrations. W. B. Saunders Co., Philadelphia and London, 1911.

It is with regret that the reviewer cannot approach his critique of this newer volume on cardiac pathology, with the intense enthusiasm a more helpful treatise would arouse. The author presents this most interesting pathological field regardless of the latter day advances in this field, and adding no information not already at hand, we fail to see any particular raison d'etre for the work. Nearly all the standard works on medicine now extant, and certainly those on pathology include the information compiled in this volume. The photographic specimens reproduced are really the most praiseworthy feature of the work and well worth examination though not of sufficient importance to warrant its general sale among the profession. Aside from the sin of omission of the newer pathology the work must clear itself of the indictment of being published on very thick and expensive paper thus making a volume of unjustified size for the actual meat contained. It is padded with raw material. H. W.

The Practice of Gynecology, Fifth Edition Thoroughly Revised. A Text-Book on the Practice of Gynecology. For Practitioners and Students. By W. Easterly Ashton, M. D., LL.D., Professor of Gynecology in the Medico-Chirurgical College of Philadelphia. Fifth Edition, Thoroughly Revised. Octavo of 1100 pages, with 1050 original line drawings. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, $6.50 net; Half Morocco, $8.00 net.

This book is clear, concise and complete. The excellent arrangement of its subject matter alone would account for its popularity. The arraying of each phase of a subject under a separate caption carries with it some danger of making a work too schematic and too liable to lead its readers into working and memorizing by rule of thumb, but it greatly conduces to ease of reference—and that is what the "busy practitioner" and the busier student (particularly when he is cramming for his examinations) want. The standpoint of the author in regard to treatment is sane and conservative. The only thing to be objected to in the book is the illustrations, many of which are ridiculously futile. What is the use of introducing line-drawings of a bath-thermometer,

of a flask containing salt-solution and of similar objects into a work on gynecology? L. E.

"Pellagra—History, Distribution, Diagnosis, Prognosis, Treatment, Etiology." By Stewart R. Roberts, S. M., M. D. C. V. Mosby Co., St. Louis. $2.50.

This volume attempts to consider the subject of "Pellagra" in a rather complete manner. The illustrations are numerous and excellent. The arrangement of the text is rather unconventional, beginning by devoting a page to the pronunciation of the word pellagra, taking up next a description of cases of the disease, and then giving its definition and general description. The author next furnishes a quite complete chapter on "history and geographical distribution" and in this chapter appears to show evidence of more than ordinary familiarity with previous authors, but at the same time leaves this part defective in the absence of references to bibliography. Throughout the book terseness of expression is wanting and in places a whole page might be reduced to a short paragraph without loss of information. In addition to this verbosity there are parts of the book where the style of English is so poor as to suggest hurried proof reading; for example, "She has always lived within one hundred yards of a branch and half a mile of a creek all her life and has eaten cornbread in the usual amounts."

In his consideration of the symptomatology, pathology and diagnosis of the disease, the author shows that he has a thorough knowledge of his subject and is moreover probably a keen clinical observer. When considering the several theories that have been advanced on the cause of pellagra, the author takes a very wise and judicial view, which, expressed briefly, is that we are without certain knowledge on this part of the subject.

The only unfavorable criticism of this work is the mode of its presentation; the information imparted is accurate and full.

D. H. C., M. D.

A Treatise on Diseases of the Hair. By George Thomas Jackson, M. D., Professor of Dermatology in the College of Physicians and Surgeons, Medical Department of Columbia University, and Charles Wood McMurtry, M. D., Instructor in Dermatology in the College of Physicians and Surgeons, Medical Department of Columbia University, New York. Octavo, 366 pages, with 109 engravings and 10 colored plates. Cloth, $3.75, net. Lea & Febiger, Philadelphia and New York, 1912.

The authors have drawn from their extensive experience and from all the literature on the subject in writing this instructive and practical book. In the preface they announce their intention to place before their readers "all that is known about the diseases of the hair and scalp." They have succeeded in doing so in an interesting and concise manner within 366 pages. The volume is illustrated with many excellent photographs taken from the authors' clinic and from other writers. It contains also many excellent plates from microphotographs illustrating various pathological conditions. There are some few color plates which are so very good that it is a matter of regret that there are not more of them. The black and white illustrations are quite good however. The chapters on ringworm of the scalp are particularly comprehensive. They are based largely on Sabouraud's great work. The senior author, whose valuable work in dermatology for many years is so well known, has given to the book that character which has made his other writings so popular. The sections on anatomy, etiology, pathology, and bacteriology have been handled ably by the junior author. The book is a valuable addition to dermatological literature which already contains so many notable contributions from American writers.

H. E. A

"Principle and Practice of Medicine." By Sir William Osler, Bt., M. D., F. R. S. Published by D. Appleton & Co., New York and London, 1912.

Appearing in conjunction with the texts of Strumpell and Dieulafoy, the eighth edition of Osler's Practice is at hand. It would indeed seem a task both needless and presumptuous to offer a review of a work so widely known were it not that this, the eighth revision in twenty years, shows probably the greatest individual number of changes. In reading one experiences a pleasure as of meeting old friends, for the "personal" part is little changed. It is this foundation of the book, the expression of the author's own observations and opinions, that makes it a master-work and at the same time such delightful reading. It is to be hoped that no amount of future editing will change this feature that has made a text-book a classic. Of necessity many changes do occur, the ever increasing literature having been sifted by experienced hands with the proper leavening of conservatism.

Naturally the greatest alterations are found in the section on the infectious diseases since it is here that the present advances are being made. A new and more logical grouping is adopted, classification being according to the biological character of the etiological agent. In typhoid fever the plan of liberal feeding is urged, and prophylactic vaccination for those exposed, although very briefly touched upon, is recommended. In the discussion of the diagnosis of pulmonary tuberculosis there is exhibited a conservatism which if coming from any but such a master clinician might bring forth a word of question. The reviewer believes that the general profession errs oftener in neglecting to call a doubtful case tuberculous than in doing the opposite. Timely emphasis is laid upon the non-bacterial fungus infections about which there is so much at present being written. In the section on malaria we find again that misstatement that "malaria is rare on the Pacific Coast," although from the excellent eradicative efforts being put forth in this state it may not be necessary to amend this in future editions. Syphilis comes in for a generous share of revision, salvarsan and the luetin reaction being considered. Regarding the infections of doubtful etiology, the recent work on poliomyelitis is reviewed, Brill's disease is assumed to be sporadic typhus, and sections on acute tonsillitis and acute coryza added.

Beriberi and pellagra are classed as intoxications rather than infections and the maize theory of the etiology of the latter emphasized. The term "diseases of metabolism" is more happily substituted for "constitutional diseases" of previous editions. It is notable that arthritis deformans is no longer considered here but under diseases of the locomotor system, and that weight is put upon its possible infectious origin with the metabolic changes secondary. It is very pleasing to see that the term "chronic rheumatism" of the earlier texts is mentioned only to be condemned, and that "myalgia" is substituted for "muscular rheumatism." A new cut and several diagrams of pulse tracings appear with the diseases of the circulatory system. The remainder of the book is not greatly altered although one can hardly read a page through without finding some bit of revision or some reference to new work as evidences of its most careful and conscientious editing.

As regards the mechanical part of the book little more can be said than that it is quite up to the publishers' standard. A particularly welcome feature is the printing of the index in larger type than formerly. Only two typographical errors

[illegible] noted "Violet" for "Vialet" on page xxiv, and "Arnette" for "Arneth" on page 534. L. H. B.

Digestion and Metabolism. The Physiological and Pathological Chemistry of Nutrition. For students and physicians. By Alonzo Englebert Taylor, M. D., Rush Professor of Physiological Chemistry, University of Pennsylvania, Philadelphia. Octavo, 560 pages. Cloth, $3.75, net. Lea & Febiger, Philadelphia and New York, 1912.

We have long been of the opinion that it is a waste of time to read the average medical book written hurriedly by a busy practitioner who repeats what has been better said before, and whose only justification for writing is that he attempts to bring the subject matter to date. Such books, even from the pens of men whom we all respect, may be wofully disappointing and lacking power to inspire thought and further study.

The very favorable reception accorded to Hewlett's translation of Krehl's book several years ago showed how eager the American clinician is to see disease from the viewpoint of the physiological chemist. We feel that we must look to them for most of the advances that medicine is to make from now on, but we have neither the time nor the technical knowledge to wade through the already enormous literature and to pick out what we need. It is this service that Dr. Taylor has so ably performed for us.

Many will decry the lack of references but the author explains that he found it impossible to emphasize here and reject there without entering into long and technical discussions which would have interfered with its value to the clinician. The book is more helpful to the average man because it does represent the judgment of an expert and his interpretation of the subject matter.

The book contains ten chapters on the composition of food stuffs; the theory of ferment action; digestion; carbohydrate metabolism; fat metabolism; protein metabolism; the metabolism of creatin-creatinin, and of purins; auto-intoxication; metabolism as a whole, and the relation of body heat and body temperature.

Although the book inspires one with hope for the future and suggests many avenues along which our therapeutics may advance, it also discourages by showing us our great ignorance. Is there one of us who would think for a moment of trying to adjust a Burroughs adding machine, or who would offer advice to Ehrlich when a batch of dimethyldiamidodiarsenobenzol went wrong. Yet, when on insufficient evidence we get the idea that a gouty patient's blood has become too acid, we boldly attempt to correct it. As Taylor says, (page 451) "There is in the blood no alkaline reaction to augment and no way to increase it if it were there to be increased," and he says, "It is very fortunate for us that the body maintains the blood's neutrality with great tenacity."

The following remarks could apply to many topics, "Experimentally the subject is etxremely complicated, while theoretically the data at our disposal are not such as to permit us to draw even approximate conclusions." He speaks with scorn of some of our foibles. Of oxaluria he says, (page 273) "It has been widely employed as a convenient receptacle for the deposition of undiagnosticated cases of illness of all kinds." Of the uric acid diathesis he says, (page 455) "It is a euphonious expression widely used fro several decades as a cloak for ignorance. But just as the fashion in furs changes, so fashions in the cloak of ignorance change and the uric acid diathesis has been lately relegated to the closet for old clothes."

From habit we forbid red meat to the nephritic and gouty even after we know that there is more purin in chicken than in beef and mutton and that the actual differences are so slight that they are not worth bothering about. It takes many years before physiology and experimental pharmacology materially change medical practice and when the physician reluctantly gives up his hobbies they are passed on to the household for another hundred years or more.

There is nothing so annoying to the average mind as a new fact, especially when it upsets cherished beliefs, but as scientific physicians we must face these things bravely.

Undoubtedly Dr. Taylor's peers will differ from him on many points but for the clinician who is studying along these lines, there is no book that we can more heartily recommend. W. C. A.

TREATMENT OF FRACTURES.

The American Surgical Association has appointed a committee consisting of Drs. William L. Estes, South Bethlehem, Pa.; Thomas W. Huntington, San Francisco, Cal.; John B. Walker, New York City; Edward Martin, Philadelphia, and John B. Roberts, Chairman, 313 S. 17th street, Philadelphia, to report on the Operative and Non-operative of Closed and Open Fractures of the Long Bones and the value of radiography in the study of these injuries. Surgeons, who have published papers relating to this subject within the last ten years, will confer a favor by sending two reprints to the chairman of the committee. If no reprints are available, the titles and places of their publication are desired.

JOHN B. ROBERTS, Chairman,
313 S. 17th Street, Philadelphia.

A RESTRICTED MATERIA MEDICA.

At the recent meeting of the American Medical Association, the Section on Pharmacology and Therapeutics devoted one of its sessions to a discussion of the desirability of a restricted materia medica. Using the investigations of the A. M. A. Chemical Laboratory as evidence, W. A. Hynson pointed out that it was a physical impossibility for the pharmacist to guarantee the quality of the immense number of drugs which he is obliged to carry in stock. Discussing the question from the standpoint of the teacher, E. LeFevre emphasized the fact that it was impossible to treat in anything but a superficial manner the vast number of drugs, whose consideration is made necessary to enable the student to pass his State board examination for licensure. O. T. Osborne next treated of the more valuable drugs and took the ground that a very small number of drugs were sufficient to permit proper treatment of the conditions that demand the attention of the physician. Finally M. I. Wilbert outlined the steps which the Council on Pharmacy and Chemistry is taking in the preparation of a list of the more useful and dependable drugs, which list it is hoped teachers and examiners will take as a basis for their materia medica instruction and examination. He stated that a brief manual treatment of these drugs is in preparation and that this is to be followed by a more comprehensive work, which will provide a reliable and up-to-date treatise on the value and use of the important medicaments.

It will be generally agreed, that 90 per cent., if not 99 per cent. of the drugs described in our dispensatories are superfluous and might be eliminated with advantage and thus encourage a better knowledge of the remaining ones. All will agree that the value of medical instruction would be greatly enhanced were the courses in materia medica made thorough rather than comprehensive.

UTAH AND NEVADA ADOPT RESOLUTIONS.

The following resolutions were adopted by the Utah State Medical Society and were then referred

to the Nevada State Organization which adopted them at its annual meeting in October, 1912:

A Certificate of Health Before License to Marry.

Moved: That this, the State Medical Association of Nevada in annual meeting assembled places itself on record as being in accord with the movement requiring all applicants for a license to marry to present a medical certificate showing him or her to be free from all veneral diseases, said certificate to be sworn to by a licensed physician who shall state that he has applied the recognized clinical and laboratory tests of scientific medicine or by a member of a State Board of Physicians to be appointed by the State Board of Medical Examiners, one of whom shall be located in each county and to be filed with the usual application for license to marry.

And we hereby instruct and authorize the State Medical Council to appear before the legislature of this state or any committees thereof and to act for and in the name of this Association in urging and supporting any measure that may be introduced into the legislature with the intent and design to require such certificate of health before marriage. Carried.

The Sterilization of Criminals and Defectives.

Moved: That this, the State Medical Association of Nevada, now in annual session assembled places itself on record as being in accord with the movement favoring the prevention of the procreation of criminals and defectives and desires to have embodied in the statutes of Nevada a law for the absolute asexulation of criminals convicted of the crime of rape and the sterilization of criminals who by succession of offenses against the criminal law shall be deemed to be "of confirmed criminal tendencies," as also those who by an established Board of Examiners or a judicial authority are found to be idiots, imbeciles, insane or epileptic without probability that the condition of any such person so examined will improve to such an extent as to render procreation by any such person advisable.

And we hereby instruct the State Medical Council to appear before the legislative body of this state or any of its committees to act for and in the name of this Association in urging and supporting measures that may be introduced into the legislature with the intent and design to prevent the procreation of criminals and degenerates. Carried.

Wilful Communication of Venereal Diseases.

Moved: That this, the State Medical Association of Utah now in annual meeting assembled, places itself on record as favoring the passage of a law making it an assault both upon the individual and upon society and as such a criminal offense and a felony for any person, male or female, to communicate any venereal disease to another person—the offense being considered wilful if an infected person shall not have obtained a medical certificate signed by a legally licensed physician which shall state that he has applied the recognized clinical and laboratory tests of scientific medicine and finds the person named in the certificate to be free from all symptoms and taint of venereal disease.

And we hereby instruct and authorize the State Medical Council to appear before the legislature of this state or any committee thereof and to act for and on behalf of this Association in urging the passage of a bill to the above effect.

Referred to Committee on Public Policy and Legislation.

Gonorrhea Cures.

Moved: That with a view to the prevention of the disastrous effects to innocent wives and children resulting from the incomplete or uncured cases of gonorrhea almost impossible to determine except by clinical and laboratory tests of clinical medicine, this the Utah State Medical Association now in annual session assembled places itself on record as favoring the enactment of a law controlling and regulating the sale in this state of patent or other medicines claiming to cure gonorrhea—as is done in the case of alcohol, opium and other articles held to endanger the public health and welfare if sold indiscriminately and without proper safeguards. And that it be made a misdemeanor to post or place "dodgers" or other bills or literature relating to venereal diseases in or upon public urinals or other public or semi-public places. And further it is of opinion that no pharmacist or druggist or clerk should prescribe for or make up any prescription except the same be given and signed by a duly licensed and registered physician of this state—the same being dated within one month of its being made up or compounded.

And, we hereby instruct and authorize the State Medical Council to appear before the legislature of this state or any committees thereof and to act for and on behalf of this Association in urging the passage of a bill to remedy the conditions now existing.

Referred to a special committee for report to the State Medical Council. Adopted.

CONFERENCE OF STATE SECRETARIES.

One of the most important meetings since the reorganization of the American Medical Association at St. Paul, in 1901, was the Conference of the Secretaries of State Societies, called by the Committee on Uniform Regulation of Membership at the Association headquarters, Chicago, October 23 and 24. This Committee was appointed in 1908, in accordance with a recommendation made in the Secretary's report for that year. At the Atlantic City session, last June, the committee summarized its reports for the last four years, and recommended that a conference of state secretaries be authorized to consider the entire question of membership conditions in the county, state and national organizations. This recommendation was referred to the Board of Trustees and a conference between the committee and the state secretaries was authorized by the Board of Trustees, to be held at the same time as the October meeting of the board. Appropriations were made for paying the expenses of all state secretaries who attended the meeting. The conference was called to order at 10:30 a. m., Wednesday, October 23, at the Association building in Chicago, by Dr. Thomas McDavitt, secretary of the Minnesota State Medical Association and chairman of the Committee on Uniform Regulation of Membership.

The Attendance.

Thirty-eight states were represented, the roll showing the following in attendance:

Dr. W. Watkins, Phoenix, Ariz.
Dr. C. P. Merriwether, Little Rock, Ark.
Dr. Philip Mills Jones, San Francisco, Cal.
Dr. G. W. K. Forrest, Wilmington, Del.
Dr. W. C. Llye, Augusta, Ga.
Dr. E. E. Maxey, Boise, Ida.
Dr. E. W. Weis, Ottawa, Ill.
Dr. Charles N. Combs, Terre Haute, Ind.
Dr. J. W. Osborn, Des Moines, Iowa.
Dr. L. R. DeBuys, New Orleans, La.
Dr. W. B. Moulton, Portland, Maine.
Dr. W. S. Gardner, Baltimore, Md.
Dr. Martin A. Robinson, Reno, Nev.
Dr. D. E. Sullivan, Concord, N. H.
Dr. Thomas N. Gray, East Orange, N. J.
Dr. R. E. McBride, Las Cruces, N. Mex.
Dr. John Ferrell, Raleigh, N. C.
Dr. H. J. Rowe, Casselton, N. Dak.
Dr. J. H. J. Upham, Columbns, Ohio.
Dr. Claude A. Thompson, Muskogee Okla.
Dr. M. B. Marcellus, Portland, Ore.
Dr. C. L. Stevens, Athens, Pa.
Dr. J. Perkins, Providence, R. I.
Dr. Edgar A. Hines, Seneca, S. C.

Dr. H. D. Arnold, Boston, Mass.
Dr. Wilfred Haughey, Battle Creek, Mich.
Dr. Thomas McDavitt, St. Paul, Minn.
Dr. E. F. Howard, Vicksburg, Miss.
Dr. E. J. Goodwin, St. Louis, Mo.
Dr. H. D. Kistler, Butte, Mont.
Dr. Joseph M. Aikin, Omaha, Neb.
Dr. Perry Bromberg, Nashville, Tenn.
Dr. H. Taylor, Fort Worth, Tex.
Dr. W. B. Ewing, Salt Lake City, Utah.
Dr. C. H. Beecher, Burlington, Vt.
Dr. Grant Calhoun, Seattle, Wash.
Dr. Charles S. Sheldon, Madison, Wis.
Dr. W. H. Roberts, Sheridan, Wyo.

No representatives were sent from Alabama, Colorado, Connecticut, District of Columbia, Florida, Kansas, Kentucky, New York, South Dakota, Virginia and West Virginia. No effort was made to secure the attendance of the secretaries of the Hawaiian Territorial Medical Society, Medical Association of the Isthmian Canal Zone or the Philippine Islands Medical Society, as these secretaries were too far removed from the place of meeting to make it possible for them to attend.

The Program.

The following program was carried out:

1. Call to order, Dr. Thomas McDavitt.
2. History and Development of Membership in the American Medical Association and Its Component Parts, Dr. F. R. Green.
3. Some of the Difficulties of the Present Situation, Dr. A. R. Craig.
4. Remedies Proposed by the Committee, Dr. Thomas McDavitt.

Discussion.

A general discussion of membership regulation was conducted under the following heads:

1. Fiscal Year. Should the fiscal year coincide with the calendar year? Should the fiscal year be the same in all county and state societies?
2. Should membership expire automatically at the end of the calendar year, and a new roster for each county and state society be made with the beginning of each year?
3. When should membership reports from county secretaries to state secretaries be due?
4. Should the dues of new members joining after the first of the year, be prorated for the remainder of the year?
5. Should an admission fee be required in addition to the annual dues?
6. Should uniform application blanks, receipt blanks, and membership and transfer cards be adopted?
7. Should constituent state associations hold charters from the American Medical Association?
8. Should a uniform plan for the transfer of members be adopted?

In addition to the above Dr. George H. Simmons, editor and general manager, discussed the question of membership in the American Medical Association, and the changes in name proposed by the Board of Trustees.

Report of the Committee on Recommendations.

After two days' discussion it was evident that the secretaries present were agreed as to the advisability of a uniform fiscal year for all parts of the organization, to coincide with the calendar year, and that they favored the expiration of membership at the end of each year and a complete revision of the membership rolls at the beginning of each year. The committee on recommendations, consisting of Dr. E. J. Goodwin, Missouri State Medical Association; Dr. Wilfrid Haughey, Michigan State Medical Society; Dr. Perry Bromberg, Tennessee State Medical Association; Dr. William S. Gardner, Medical and Chirurgical Faculty of Maryland, and Dr. F. R. Green, secretary of the committee and of the Council on Health and Public Instruction, brought in a report recommending the adoption of provisions on these two points, and that all other points be deferred for further consideration. The report of the committee follows:

The Committee on Recommendations herewith submits the following report:

1. We recommend that this conference endorse the plan of having the fiscal year coincide with the calendar year in all parts of the organization. We further recommend that secretaries of all state associations which have not already adopted this provision bring this matter to the attention of their associations and recommend its adoption.

2. We recommend that constituent state associations adopt provisions making dues in component societies payable on January 1 of each year, and requiring county secretaries to report to state secretaries all members in good standing, together with their per capita assessment for the current year not later than March 31. State societies desiring to do so may provide a shorter period.

3. The recommendation regarding the third question under discussion is covered by our recommendation of the second.

4. Regarding the prorating of dues, we recommend that this be made optional with each component society.

5. Regarding an admission fee for membership we recommend that this be made optional with component societies.

6. While the committee recognizes, as a general principle, that a uniform system of blanks for county and state societies is desirable, as soon as practicable, we recommend further consideration of this question at a later conference.

7. We recommend that the House of Delegates of the American Medical Association be asked to consider the advisability of issuing charters to constituent state associations.

8. We recognize the desirability and advantage of a uniform method of transfer, but this system cannot be established until there has been developed a greater uniformity in other details of organization. We therefore recommend that this question be made the subject of discussion at a future conference.

9. The committee recognizes the value of this conference to the state association secretaries, and to the purpose of organization; it therefore recommends that future conferences of this character be held.

The report of the committee was unanimously adopted by a rising vote. It was also moved and carried that the secretary be requested to send copies of the report to each state secretary and to each state journal, and that the proceedings of the conference, as published in the Bulletin, be furnished to each state secretary desiring them, in sufficient quantities to send one to each member of the state association. After a vote of thanks to the Board of Trustees for making this conference possible by the appropriation, the conference adjourned.

INCONCEIVABLE IGNORANCE.

In the last malpractice suit we tried we had a physician on the stand by the name of * * * * As it was necessary for his testimony to be written up for argument, it occurred to me that the quotation of portions of it would interest you. On behalf of plaintiff he claimed that plaintiff was suffering from a dislocated shoulder and a dislocated elbow, and on direct examination he testified, in part, as follows:

"Q. Now what did you do on that first day in reference to the elbow?

A. What did I do?

Q. Yes.

A. Well, I simply put it in a hot air apparatus to see if I could relax the muscles, and if

possible reduce the dislocation of the elbow; which I didn't succeed in doing. * * * *

Q. Doctor, what did you discover in the examination of the shoulder?

A. Why, I found a downward dislocation of the shoulder joint."

When I came to cross-examine him, he testified, in part, as follows:

"Q. You say you have seen all four kinds of dislocations?

A. Yes.

Q. Which of those is the very rare dislocation?

A. There is a rare dislocation where the arm is turned forward into the chest.

Q. What is the technical name of that dislocation?

A. Forward dislocation.

Q. What I mean is, what is the technical designation of that particular dislocation—do you know?

A. It is simply a forward dislocation.

Q. Is there not a technical name that all physicians know, in speaking of that dislocation?

A. I cannot call to mind just now. * * *

Q. This case of Taylor's was not a foward dislocation?

A. No, it was not; it was a downward dislocation.

Q. What is the technical name for that dislocation?

A. Simply downward dislocation.

Q. Don't you physicians speak of it as a subglenoid dislocation?

A. Yes, sir.

Q. Isn't that the term?

A. Yes. * * *

Q. What is the name of the cavity with which the upper end of the radius articulates?

A. The upper end of the radius?

Q. Yes; where you say the radius was partially dislocated?

A. That is the condyle of the humerus.

Q. Doesn't it articulate with any other bone?

A. It articulates with the ulna—You mean the radius?

Q. Yes.

A. Yes, it does, but the articulation is very slight.

Q. Don't you know that it does articulate with the ulna?

A. Yes.

Q. You are positive of that, are you?

A. No—wait a minute—well it is pretty close; I believe there is a slight facet there. It comes in contact with the border, or touches the ulna, but the space is very small, anyway—I am sure of that, as near as I can remember. I don't know exactly.

Q. You say you don't know exactly?

A. I am not sure how close it is, but I am almost sure it is—it is so close. * * *

Q. You mean that the upper end of the radius was slightly out of position with the condyle of the humerus where it usually rests?

A. That is correct.

Q. Does the upper end of the radius articulate with the humerus?

A. With the condyle of the humerus? Is that your question?

Q. Yes.

A. Yes sir, it articulates.

Q. Is there any cavity in the ulna with which the radius articulates?

A. I am not quite sure,—no; there is no cavity; it simply touches as one bone might touch another. No, there is no cavity.

Q. What is the name of the cavity which holds, —or, I should say, what is the name of the joint in the elbow—what do you call that?

A. It is a hinge joint. Kind of a hinge joint; works over the bone like a hinge and there is a hook in that end. The ulna fits into that cavity.

Q. What is the name of the cavity?

A. The glenoid cavity—the condyle cavity where the radius fits in.

Q. You mean the ulna, don't you.

A. Where the ulna fits in, yes.

Q. Isn't it a fact that the ulna doesn't fit into any cavity there at all?

A. The process of the ulna does fit into a cavity. It is back here (witness indicating on his person).

Q. Isn't it a fact that it is the humerus that fits into the cavity of the ulna?

A. No, no.

Q. What is the cavity in the ulna, the name of the cavity in which the lower end of the humerus fits?

A. I can't think of it.

Q. The greater sphenoid, is it?

A. Hardly that.

Q. What is the name of it?

A. I don't remember.

Q. Is it known as the greater sigmoid?

A. No, sir.

Q. What is the name of the cavity in the ulna with which the radius articulates?

A. With which the radius——

Q. The upper end of the radius articulates?

A. The cavity in the ulna?

Q. Yes, sir.

A. That is the end of the ulna?

Q. No, sir, the end of the radius articulates?

A. With the condyle of the humerus, do you mean?

Q. No, sir.

A. What is the name of the cavity with which the radius articulates?

Q. Yes, sir.

A. The radius.

Q. Yes, sir.

A. Articulates?

Q. Yes, sir.

A. The condyle cavity of the humerus.

Q. But I am asking you what cavity of the ulna.

A. Articulates with the humerus?

Q. No, with the radius.

A. Oh, with the radius—why there is no cavity.

Q. Isn't it a fact that there is a cavity there known as the lesser sigmoid cavity?

A. There is no cavity there.

Q. There is no articulation between the ulna and the radius?

A. There is a slight articulation; yes, sir.

Q. What is the name of the cavity?

A. It is not a cavity. It is simply where the two bones come together—they come in contact.

Q. It is a joint, isn't it?

A. Well, yes; it is simply an articulation, that is about all you can say, if I remember right. I have had plenty to think of and do, without this tomfoolery about the joints.

Q. Do you mean to say the fact that you do not know the names of these joints, you call that tomfoolery?

A. Yes, now—it was a serious matter when I was studying the bones.

Q. Do you think it is tomfoolery for a man not to know that there is a cavity in the ulna with which the radius articulates?

A. There is a cavity. I can give you a sketch of it, if you want it.

Q. What is the name of that cavity?

A. I don't remember.

Q. Don't you know that it is known as the lesser sigmoid?

A. It may be, or may not.

Q. You cannot even remember?

A. No, sir; I don't remember. * * *

Q. Will you describe the manner in which you put that shoulder back in place, as you say you did?

A. Yes, sir; the method I used to try to reduce

it—the first thing I did was to apply the heater or heat to the parts, and see if I could reduce, or relax the muscles of the arm and shoulder. I then got him on the floor with my heel—I didn't have my shoe on—in the axillary and I rotated the arm in the direction that is usually done, forward and backward, and so forth to get the joint back in place. That was the method I used.

Q. Was that the method by which you succeeded in getting it back?

A. That was the method by which I succeeded in doing what I did. I never got it back."

Isn't it a shame that a physician's professional standing should be jeopardized by the testimony of such an ignoramus?

THE FIRST EXPEDITION FROM THE TULANE UNIVERSITY SCHOOL OF TROPICAL MEDICINE TO THE TROPICS FOR THE STUDY OF MALARIA.

This expedition was made possible through the kindness of an unknown friend of the school who, through Dr. Isadore Dyer, Dean of the Medical Department of Tulane University, contributed a fund to finance the project.

The United Fruit Company, who have already contributed $25,000 towards the expenses of the School of Tropical Medicine, placed their steamships and other equipment at the service of the school for the transportation gratis of the expedition and apparatus. Colonel W. C. Gorgas, Chief Sanitary Officer of the Panama Canal Zone, with various members of his staff, placed all the material in his hospital at the disposal of the expedition and extended every possible courtesy.

The personnel of the expedition consisted of two members of the school, Dr. Charles Cassedy Bass, Assistant Professor of Tropical Medicine and Hygiene, and Dr. Foster Mathew Johns, Assistant in the Laboratories of Tropical Medicine and Hygiene.

The object of the investigation was the cultivation of the malarial parasites in vitro which had already been accomplished by Professor Bass, but many details of which remained to be elucidated and confirmed.

In this the party obtained complete success. It was found that the malarial plasmodia can be grown in human serum, in Locke's fluid (from which calcium chloride is omitted) and in human ascitic fluid. In the majority of the cases dextrose must be added to the medium to secure satisfactory growth. The most favorable temperature for the cultivation of plasmodia is about 40° C.

Positive cultures were obtained from 29 cases of estivoautumnal malaria, 6 cases of tertian and 1 case of quartan. Cultures were carried on for four generations from the parent culture before the expedition left Central America, and can probably be maintained indefinitely.

The full report of the expedition may be found in the October number of the Journal of Experimental Medicine.

In addition to these researches the school has also carried out experimental work on pellagra, leprosy, berri-berri, blackwater fever, filariasis, and other tropical diseases, which work will be found in the forthcoming first report of the school.

The school is under the direction of Dr. Creighton Wellman, formerly of West Africa and the London School of Tropical Medicine, is an integral part of the Medical Department of Tulane University of Louisiana, and begins its second year of existence with bright prospects.

NEW AND NON-OFFICIAL REMEDIES.

Since publication of New and Non-Official Remedies, 1912, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Non-Official Remedies."

Plague Bacterin, a bacillus pestis vaccine, marketed in single-dose vaccination. 1 Cc. ampules containing 5 billion killed B. pestis. Also marketed in two-dose vaccination, for one immunization. 1 Cc. ampules containing respectively 1 billion and 2 billion killed B. pestis. The second dose is to be injected from seven to ten days later or when the reaction to the first injection has subsided. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Oct. 12, 1912, p. 1377).

Staphylo-Strepto-Bacterin Mixed is a mixed vaccine marketed in a package of four syringes containing increasing doses of killed staphylococcus pyogenes aureus, killed staphylococcus pyogenes albus and killed streptococcus. H. K. Mulford Co., Philadelphia (Jour. A. M. A., Oct. 12, 1912, p. 1377).

Diphtheria Antitoxin, U. S. P. marketed in syringes containing 1,000, 2,000, 3,000, 4,000 and 5,000 units; also in bulbs. Diphtheria antitoxin globulin marketed in syringes containing 1,000 units. Cutter Laboratory, Berkeley, Cal. (Jour. A. M. A., Oct. 12, 1912, p. 1377).

Detre Differential Test consists of tubes containing respectively Tuberculin, O. T., Tuberculin B. F. human, and Tuberculin B. F. bovine. Cutter Laboratory, Berkeley, Cal. (Jour. A. M. A., Oct. 12, 1912, p. 1377).

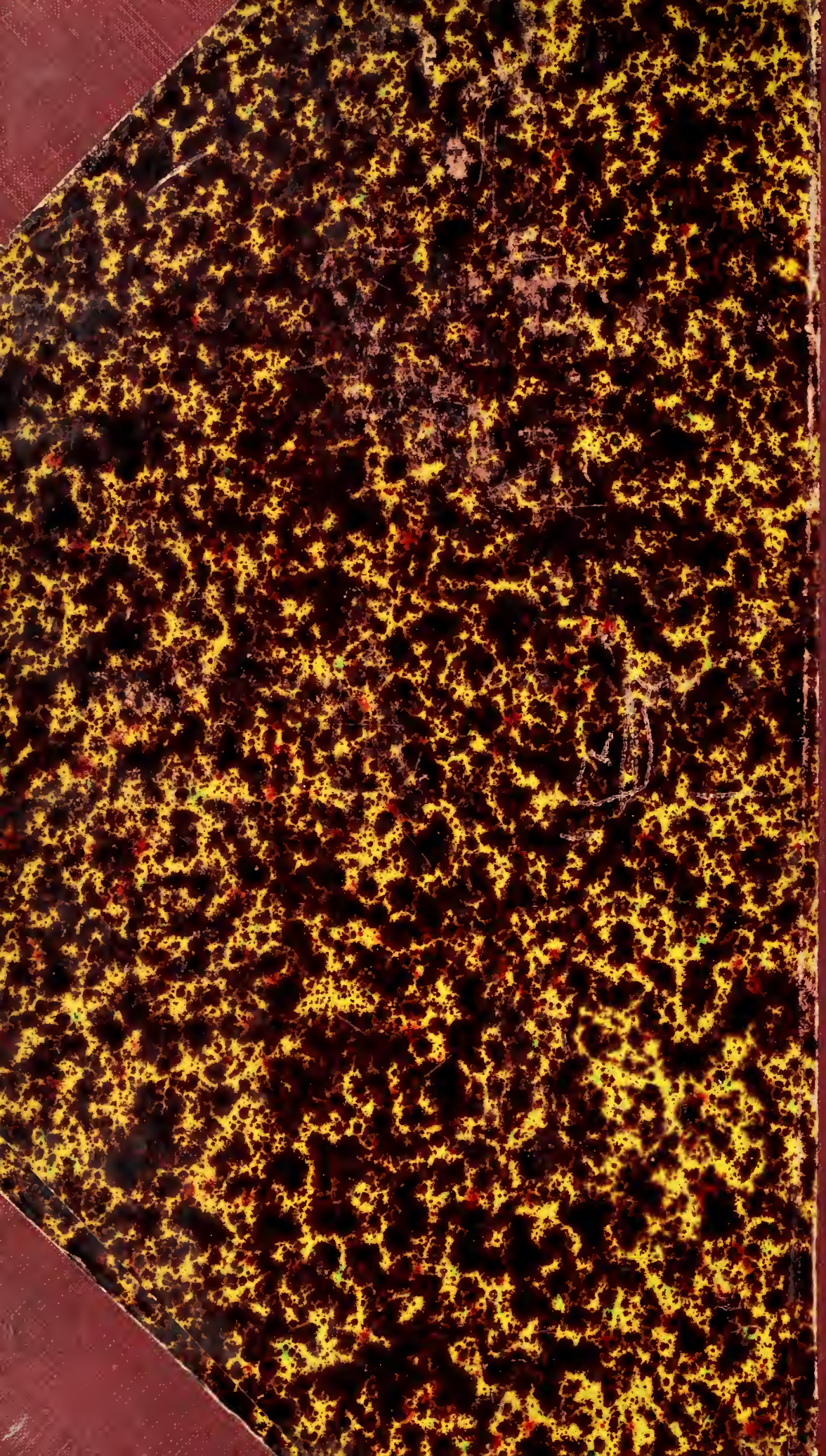
Tuberculin O. T. (Dilution) Von Pirquet's Reaction, marketed in packages containing ten capillary tubes and one ejecting bulb. Cutter Laboratory, Berkeley, Cal. (Jour. A. M. A., Oct. 12, 1912, p. 1377).

Glycerinated Vaccine Virus is a vaccine virus marketed in packages containing respectively five and ten capillary tubes. The Slee Laboratories, Swiftwater, Pa. (Abbott Alkaloidal Co., Chicago) (Jour. A. M. A., Oct. 12, 1912, p. 1377).

Bismuth Betanaphtholate, Merck is a non-proprietary article and complies with the tests laid down in New and Nonofficial Remedies for Bismuth Betanaphtholate, Merck & Co., New York (Jour. A. M. A., Oct. 12, 1912, p. 1377).

DEATHS.

Charles, W. B, Hanford, Cal.
Stitt, J. W., Berkeley.
Fay, Wilbert L., Foresthill, Cal.
Mack, Jno. A., San Bernardino.
Gibbs, J. S., Pasadena, Cal.
Abrams, Marc, San Anselmo, Cal.
Potts-Longshore, Anna M., San Diego
Harden, Chas. R., Los Angeles.
Bayer, Joseph, San Francisco.
Pring, Ernest, San Francisco.

NEW MEMBERS.

Day, Robt. U., Los Angeles.
Frost, Lowell C., Los Angeles.
Athon, L. H., Los Angeles.
Taggart, Thos. E., Los Angeles.
Granger, Arthur S., Los Angeles.
Hiller, A. W., Los Angeles.
Wheat, J. E., San Francisco.
Campbell, Ralph R., Los Angeles.
Spiers, H. W., Los Angeles.
Waller, Geo. P., Jr., Los Angeles.
Hefferman, W. T., Los Angeles.
Anderson, Oscar, Ocean Park.
Knox, C. R., El Cajon, Cal.
Dunn, A. H., San Diego.
Smale, Geo. A., Los Angeles.
Perkey, dArian, Los Angeles.
Crum, Robt. L., Los Angeles.
Ide, Clarence E., Los Angeles.
Squire, H. A., Los Angeles.
Heppner, A. H., San Jose.
Aiken, I. R., Oakland, Cal.
Currie, Donald F., San Francisco.
King, Chas. J., San Francisco.